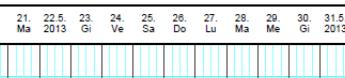
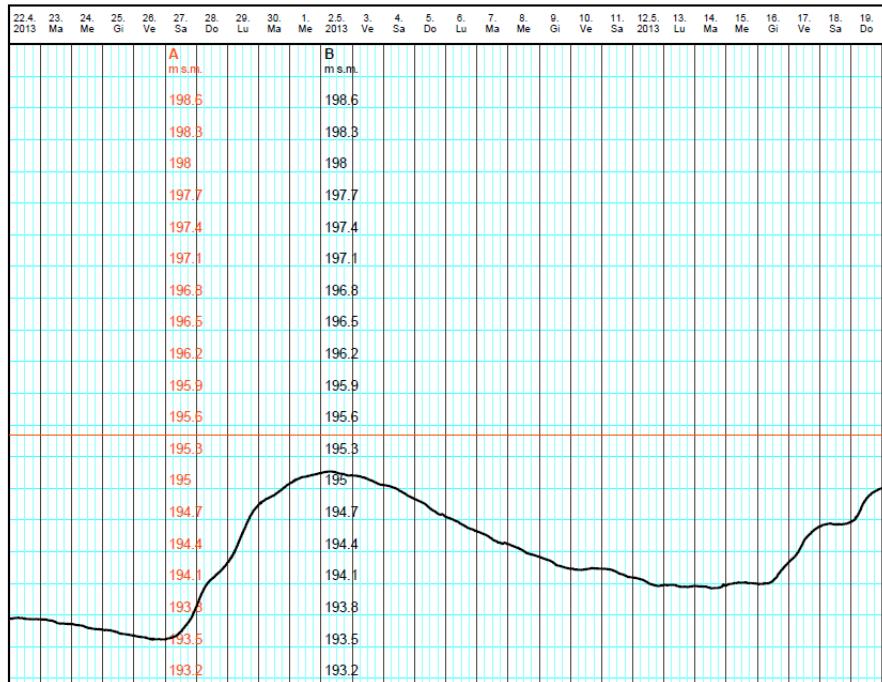




Primavera 2013



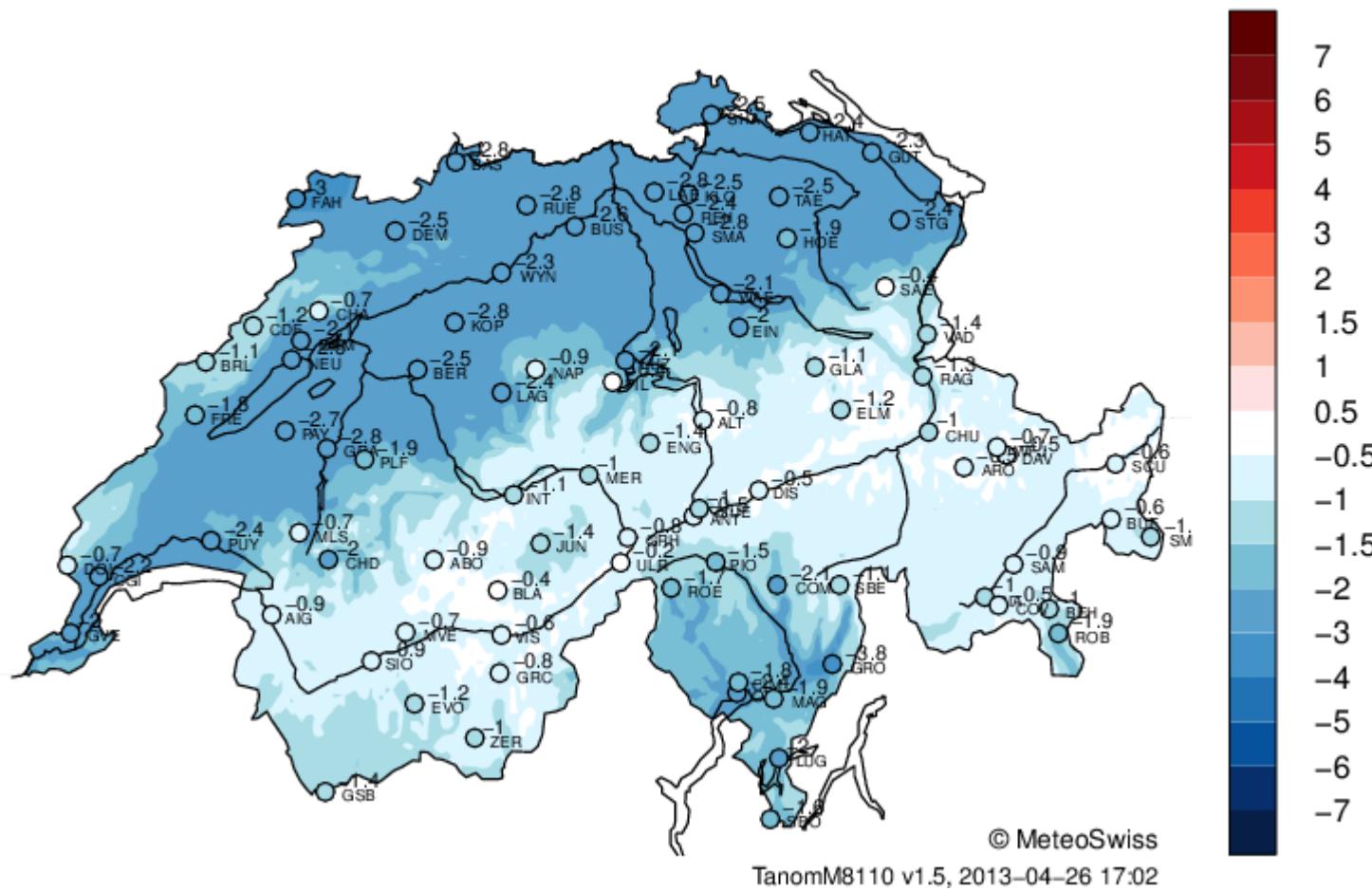
Retrospettiva meteoclimatica

Matteo Buzzi



Temperatura: marzo 2013

Monthly Temperature Anomaly (degC) Mar 2013 (Ref. 1981–2010)

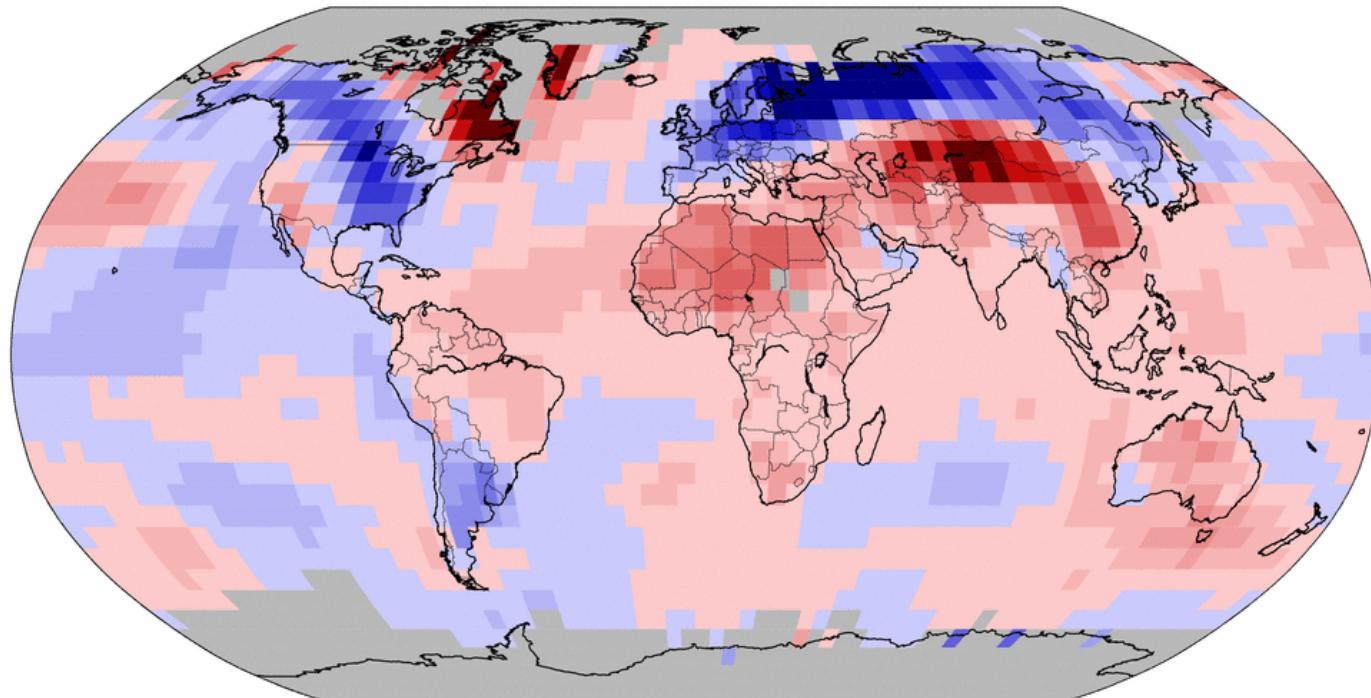




Temperatura: anomalie globali marzo 2013

Land & Ocean Temperature Anomalies Mar 2013
(with respect to a 1981–2010 base period)

Data Source: MLOST version 3.5.3



NOAA's National Climatic Data Center
Mon Apr 15 08:15:03 EDT 2013

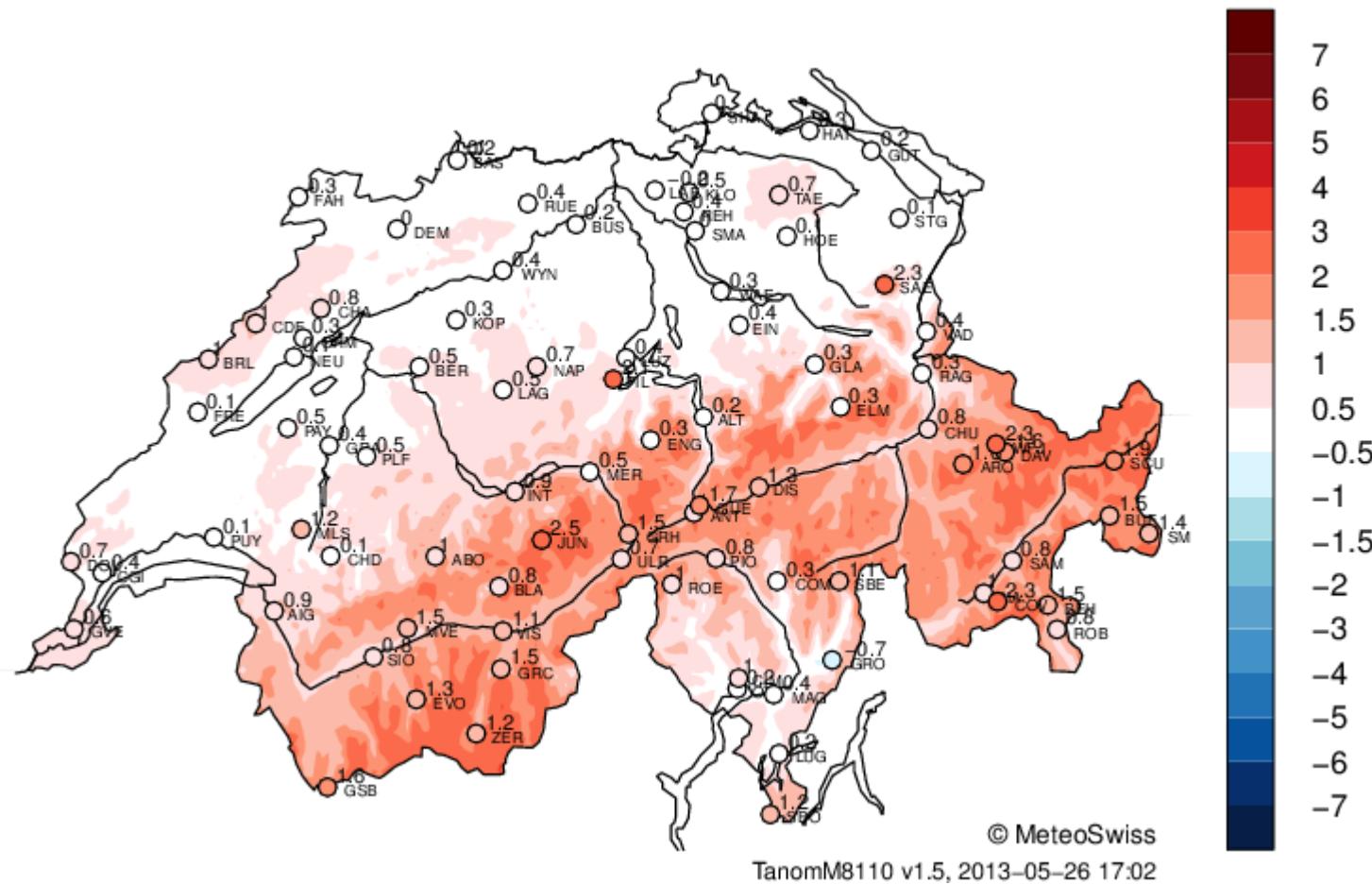
Degrees Celsius

Please Note: Gray areas represent missing data
Map Projection: Robinson



Temperatura: aprile 2013

Monthly Temperature Anomaly (degC) Apr 2013 (Ref. 1981–2010)

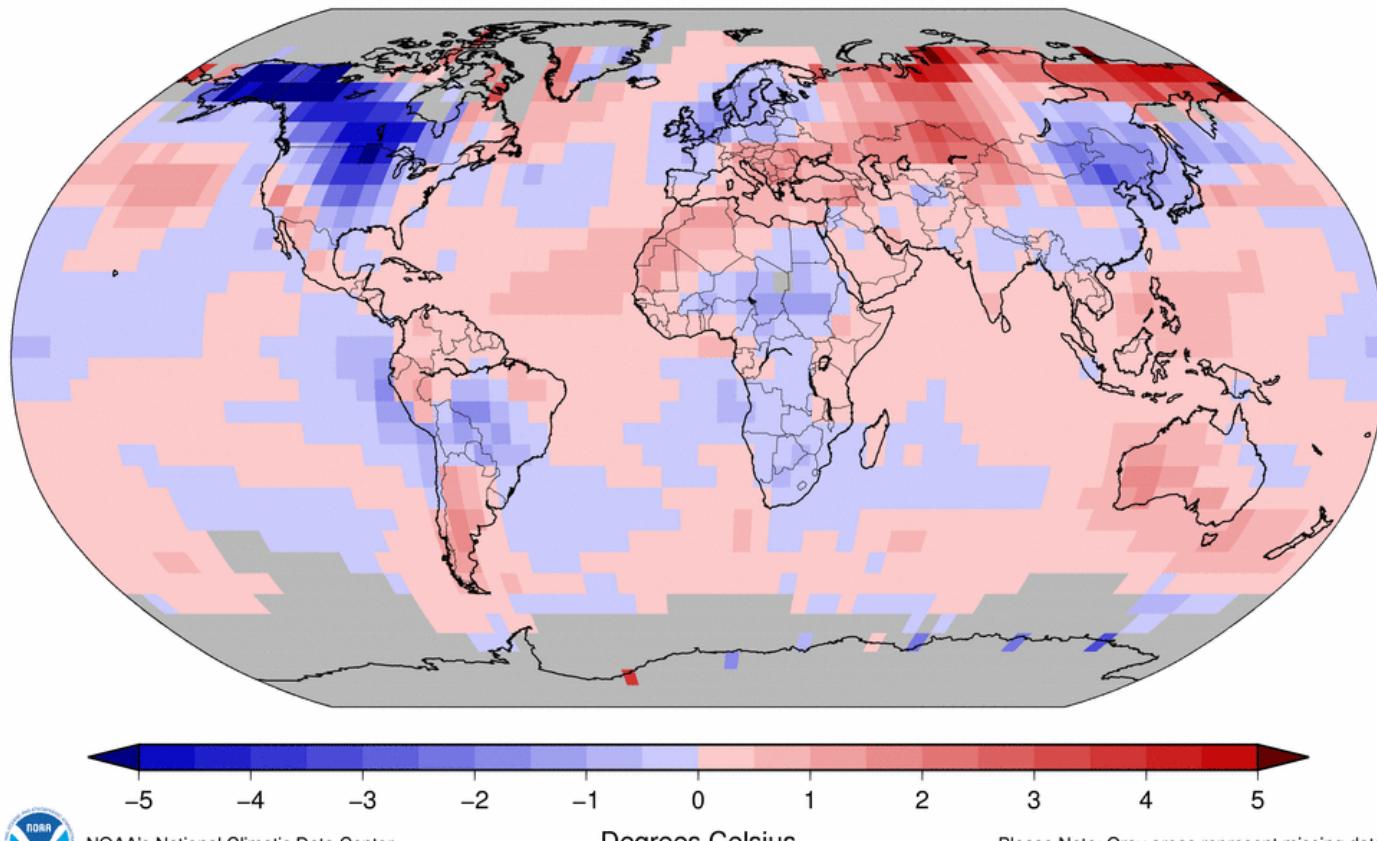




Temperatura: anomalie globali marzo 2013

Land & Ocean Temperature Anomalies Apr 2013
(with respect to a 1981–2010 base period)

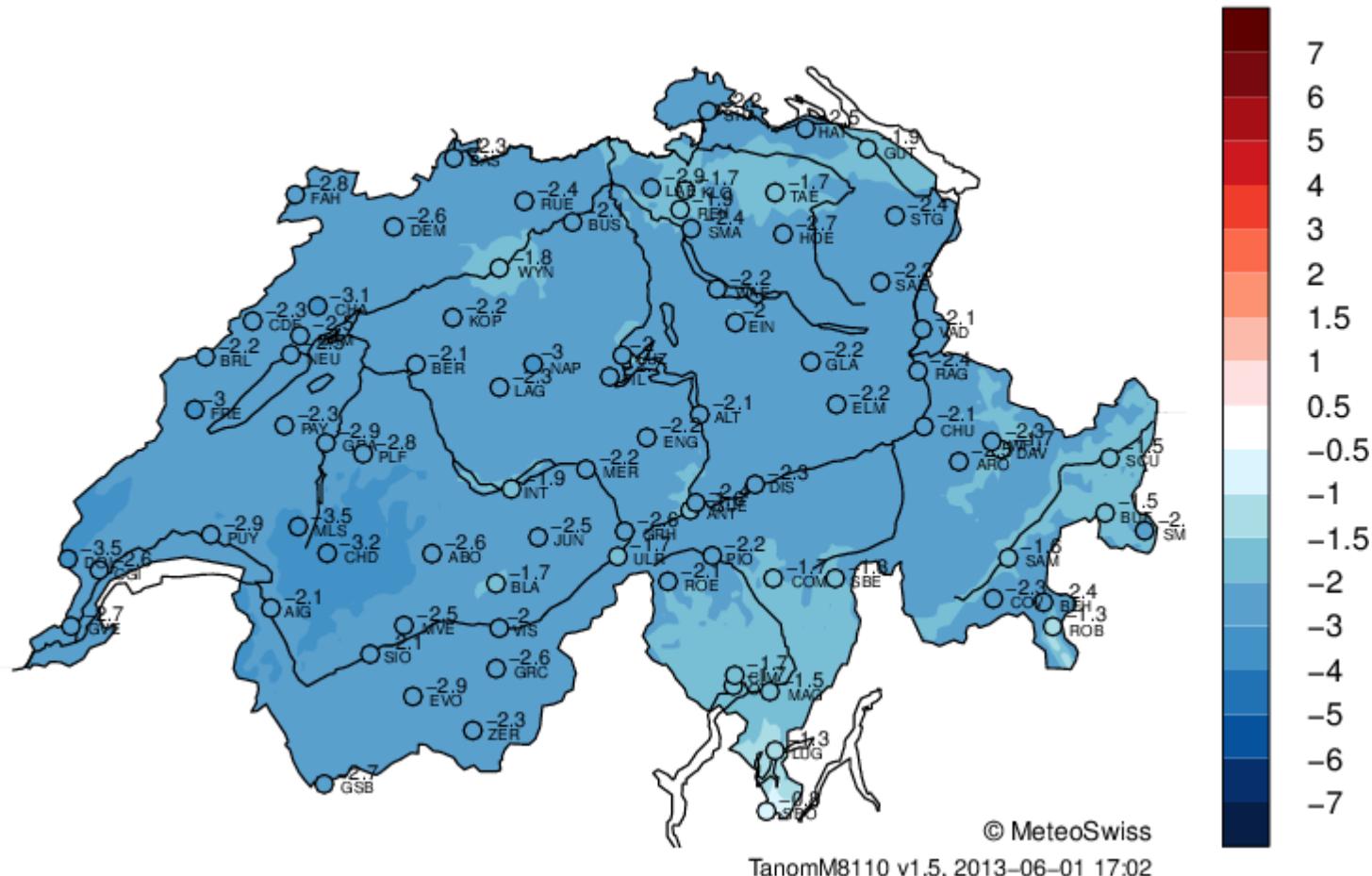
Data Source: MLOST version 3.5.3





Temperatura: maggio 2013

Monthly Temperature Anomaly (degC) May 2013 (Ref. 1981–2010)

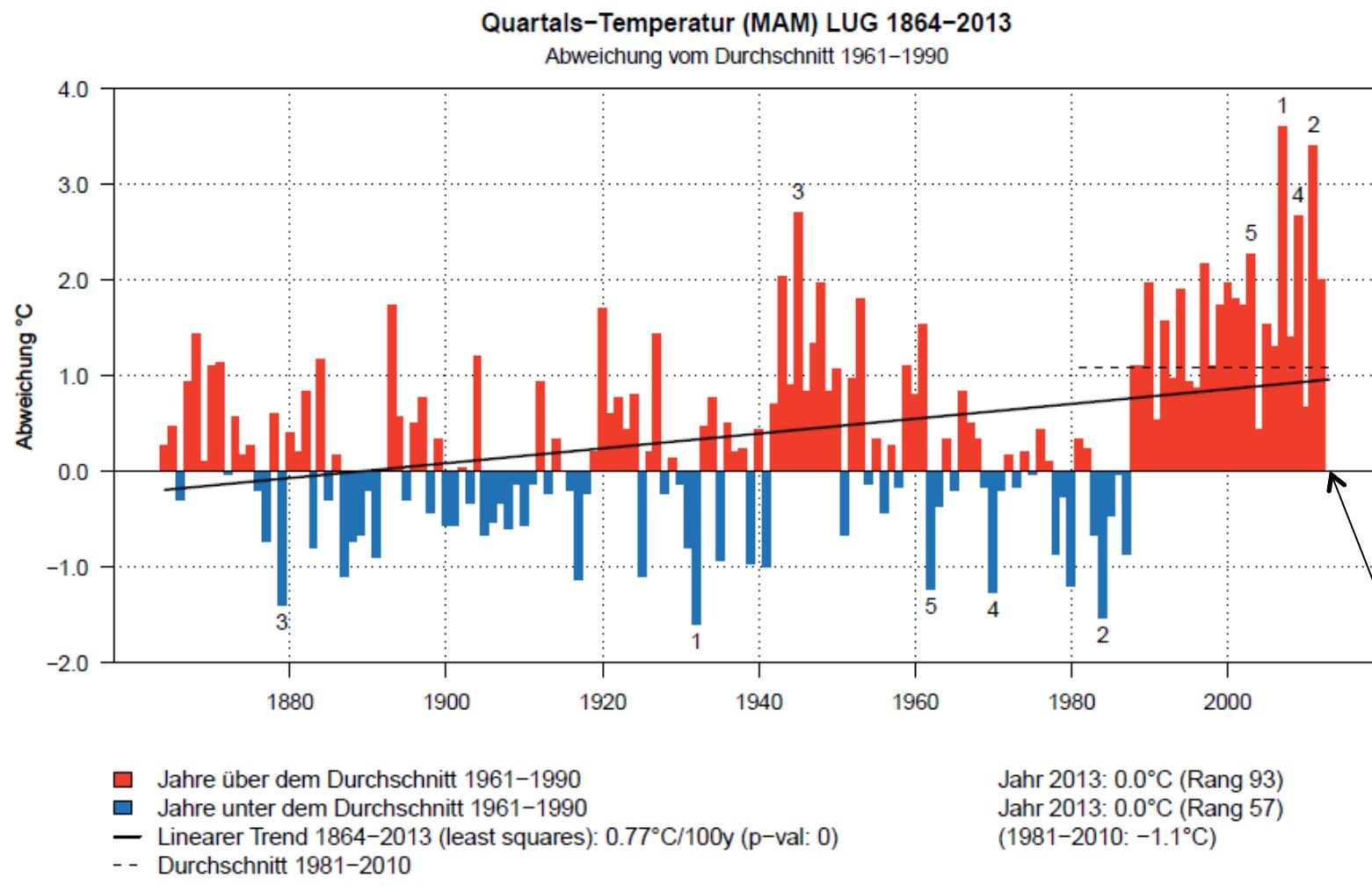




Temperatura: anomalie globali maggio 2013



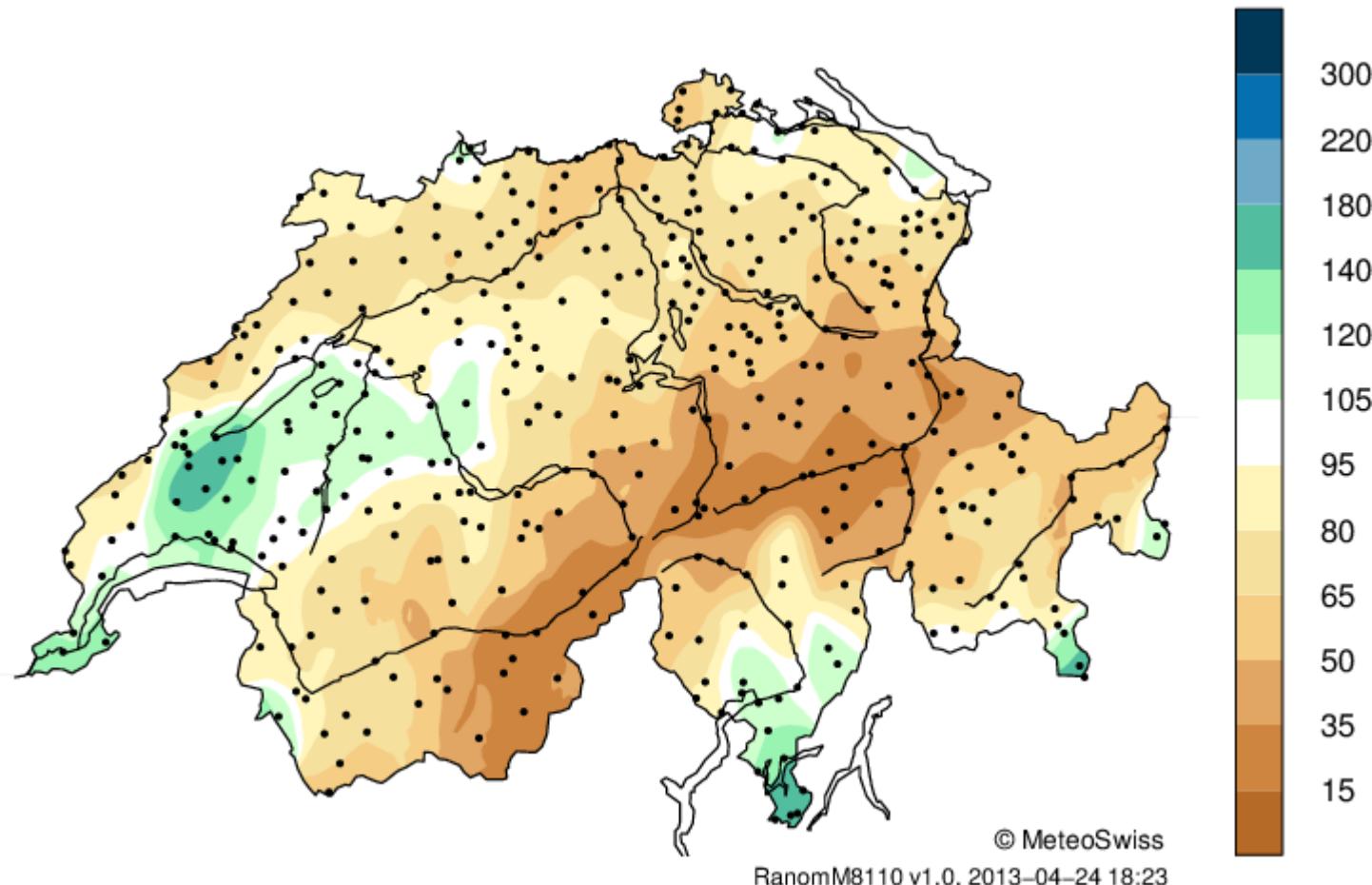
La primavera in TI 2013 rispetto alle altre





Precipitazioni: marzo 2013

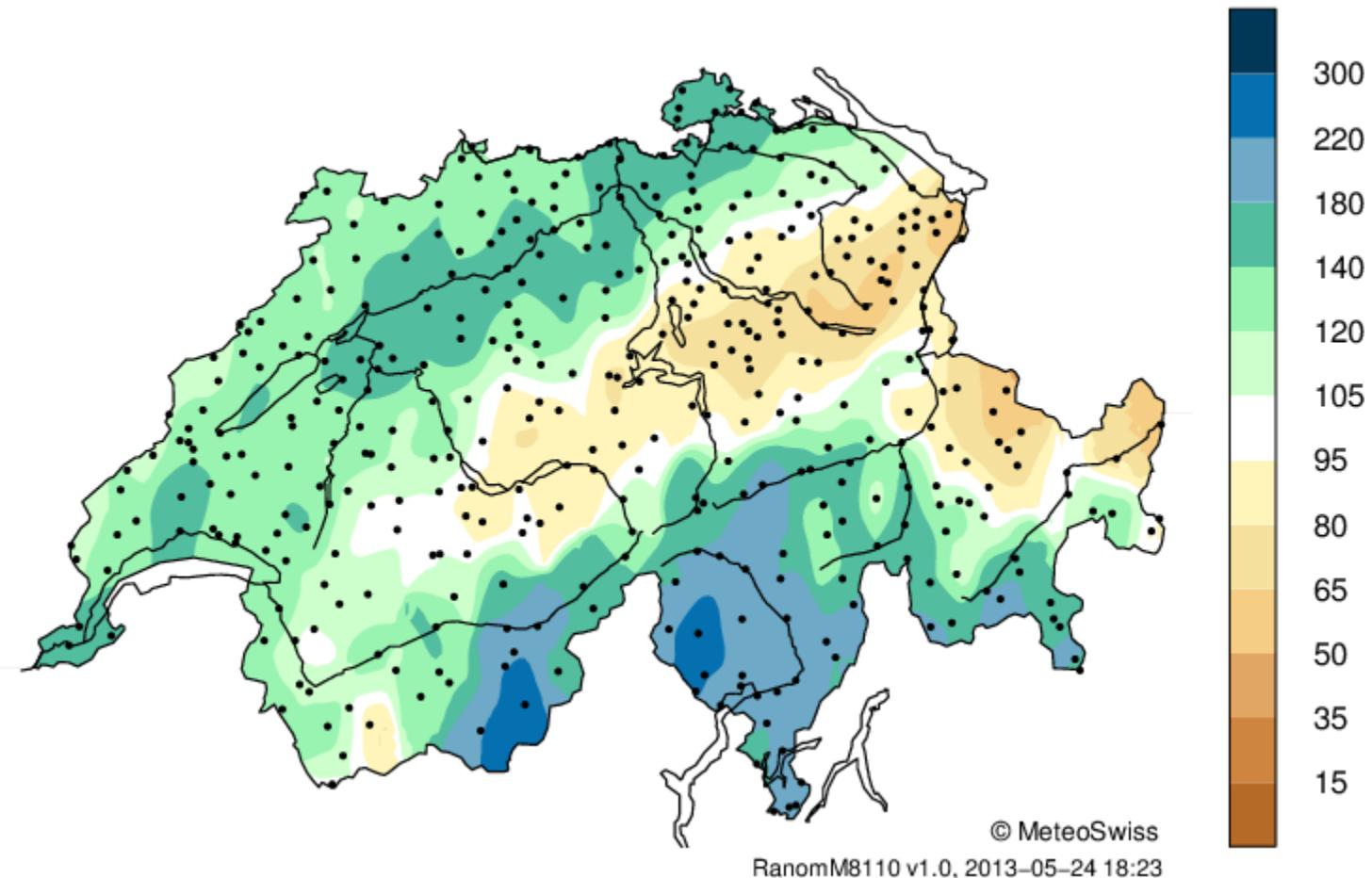
Monthly Precipitation Anomaly (%) Mar 2013 (Ref. 1981–2010)





Precipitazioni: aprile 2013

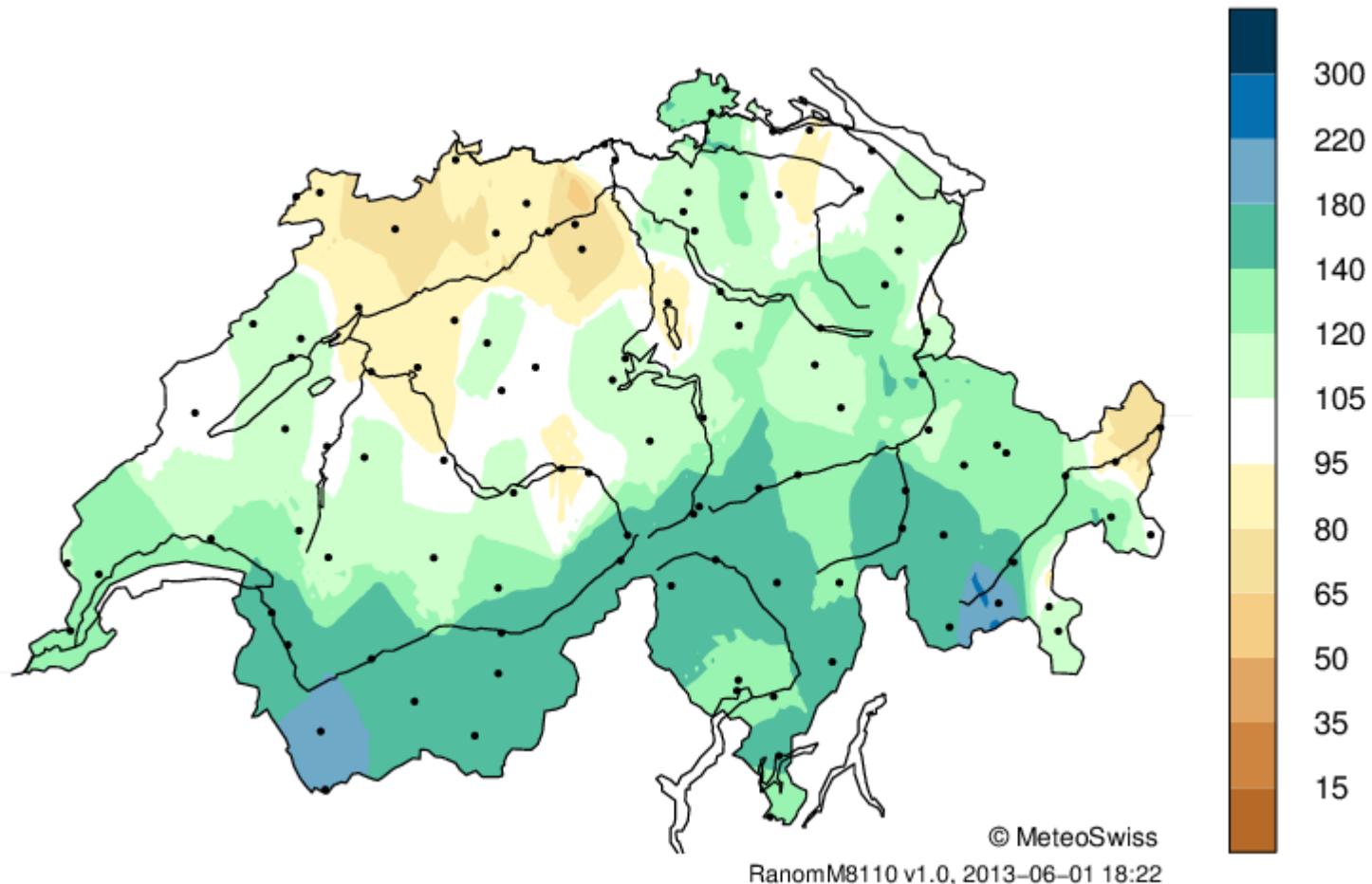
Monthly Precipitation Anomaly (%) Apr 2013 (Ref. 1981–2010)





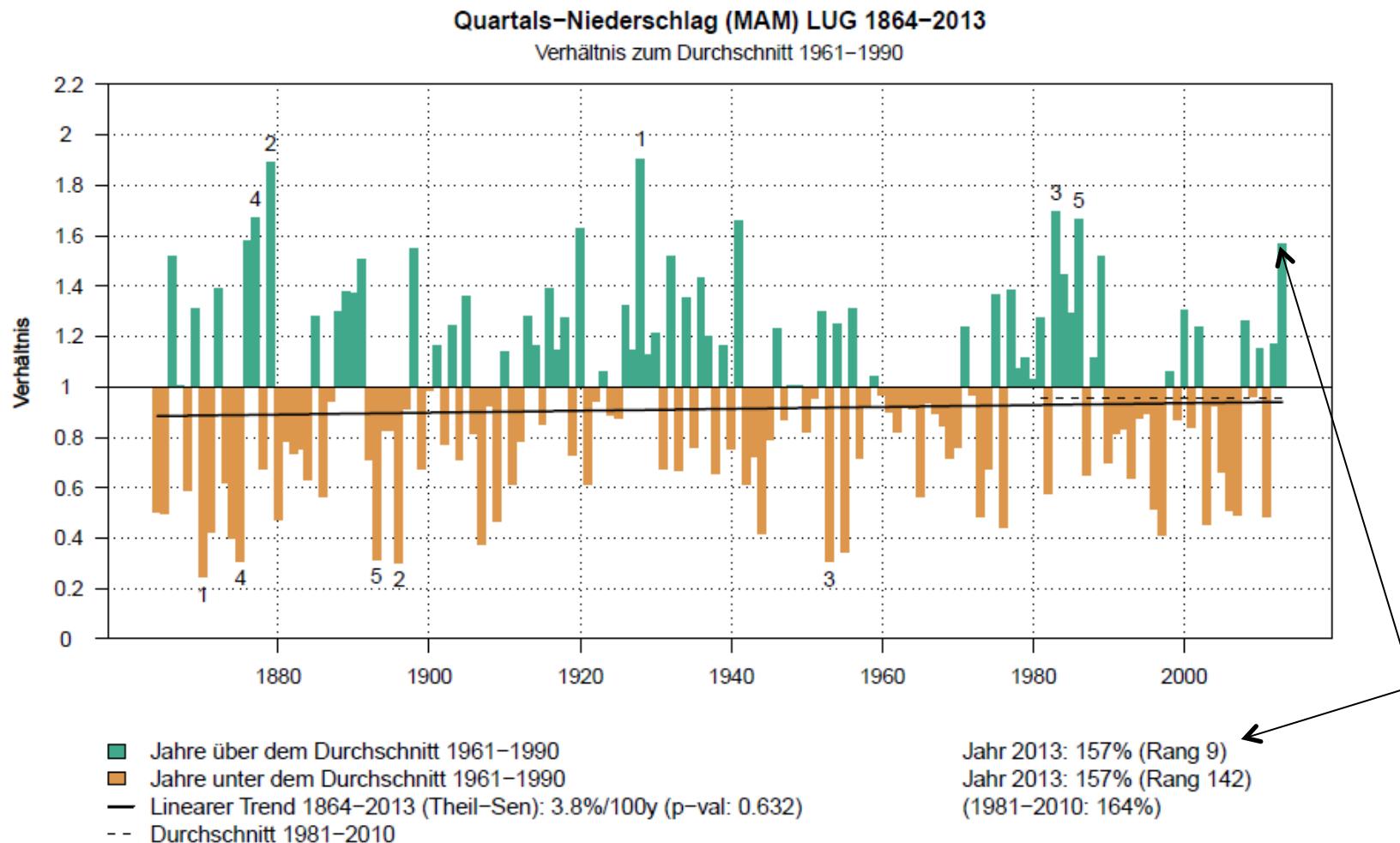
Precipitazioni maggio 2013

Monthly Precipitation Anomaly (%) May 2013 (Ref. 1981–2010)





La primavera 2013 rispetto alle altre



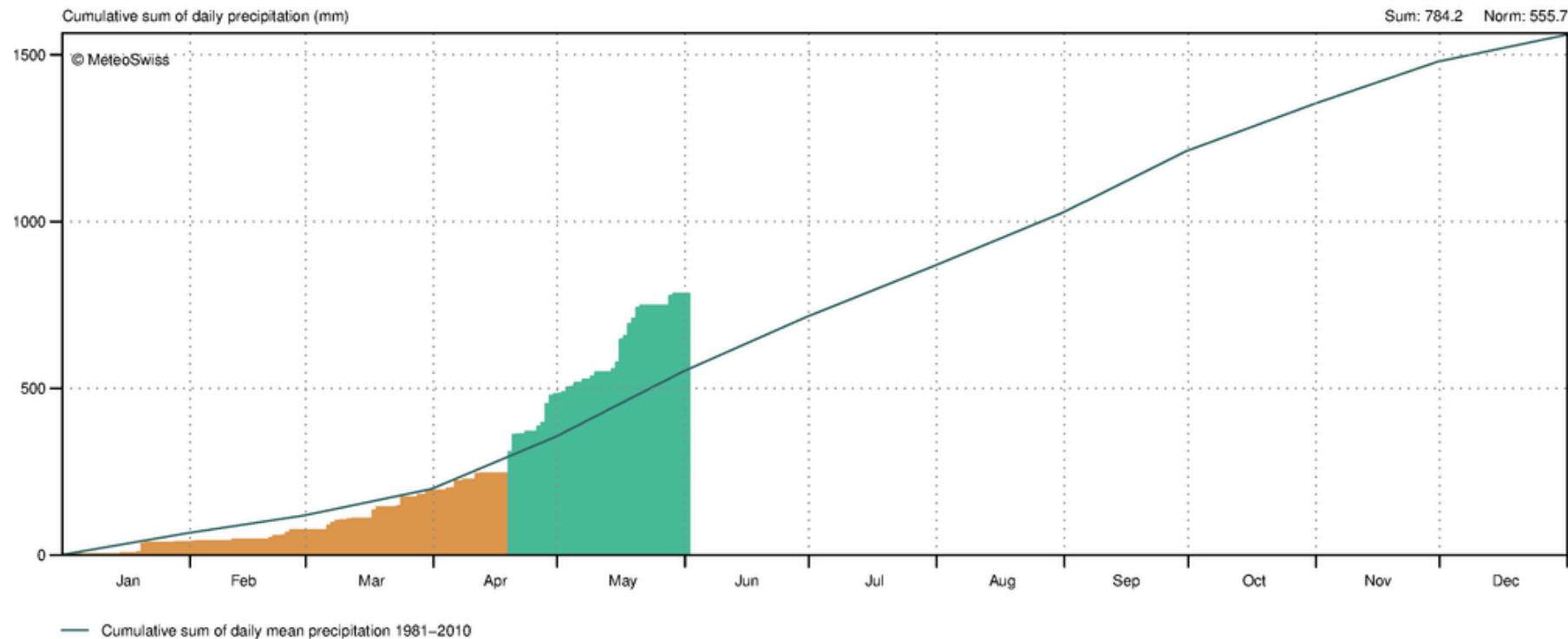
© MeteoSchweiz

Nona primavera più piovosa dal 1864!
La più piovosa dal 1986!



Somma precipitazioni 2013

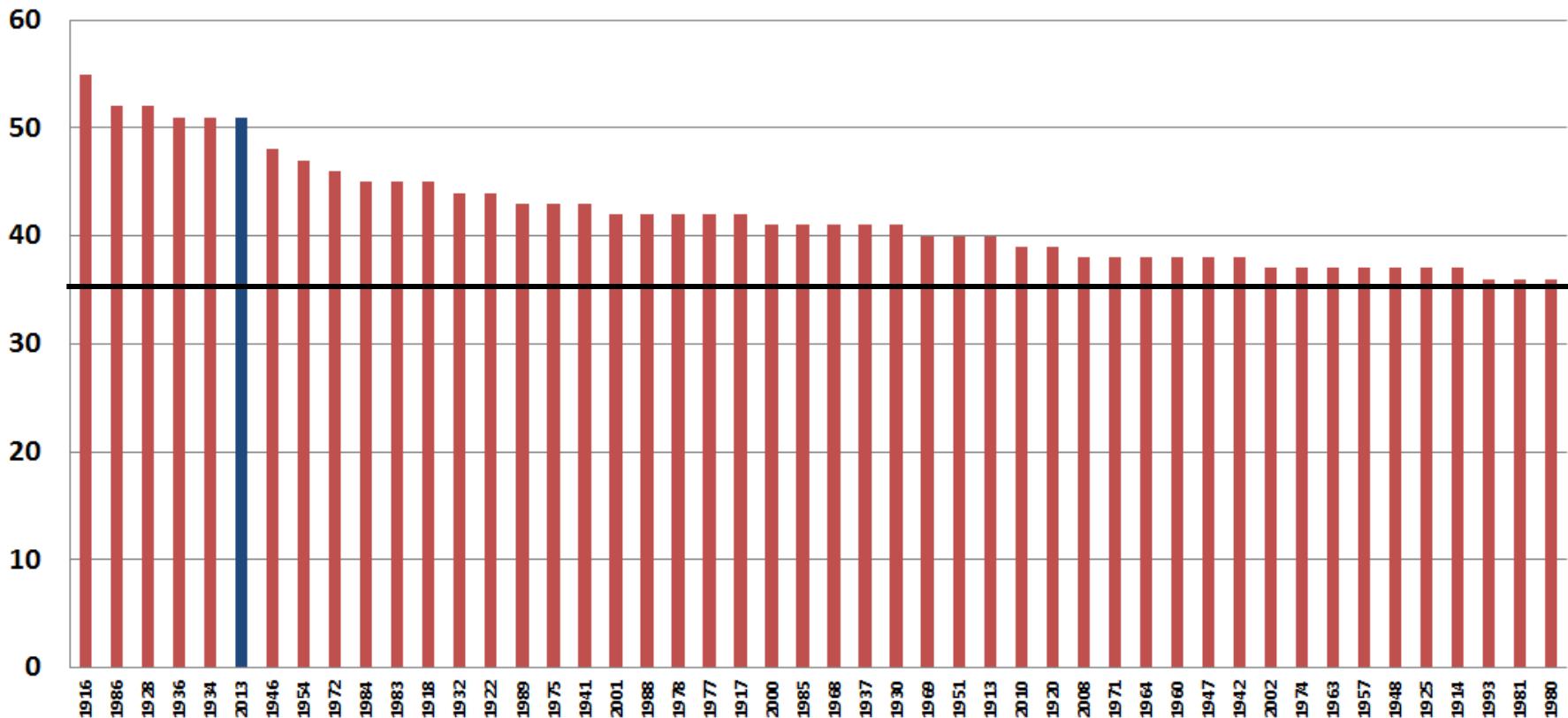
Lugano (273 m)
01.01.2013 – 01.06.2013





Giorni di pioggia

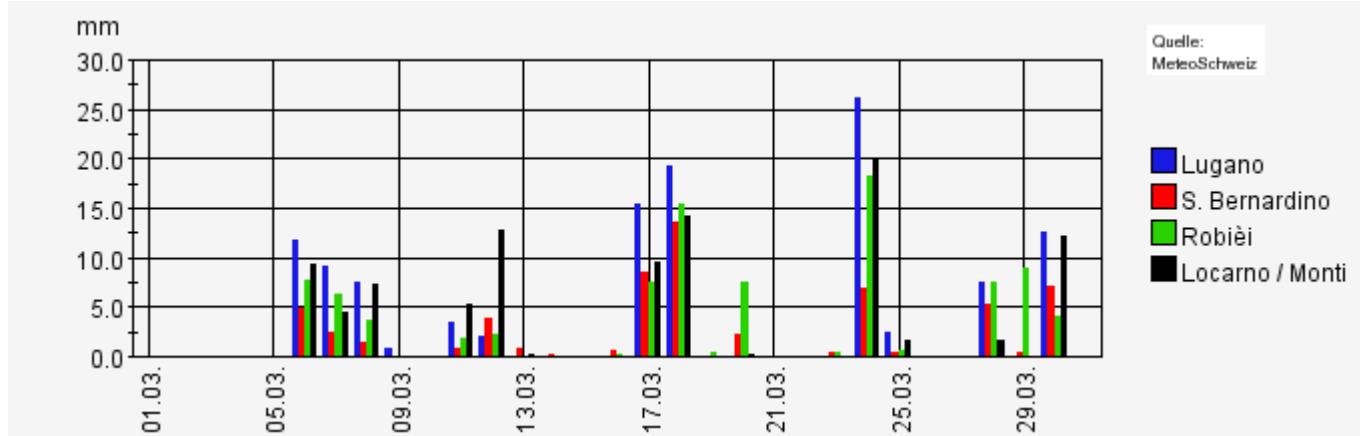
Primavera: numero di giorni con $RR > 0.3 \text{ mm}$



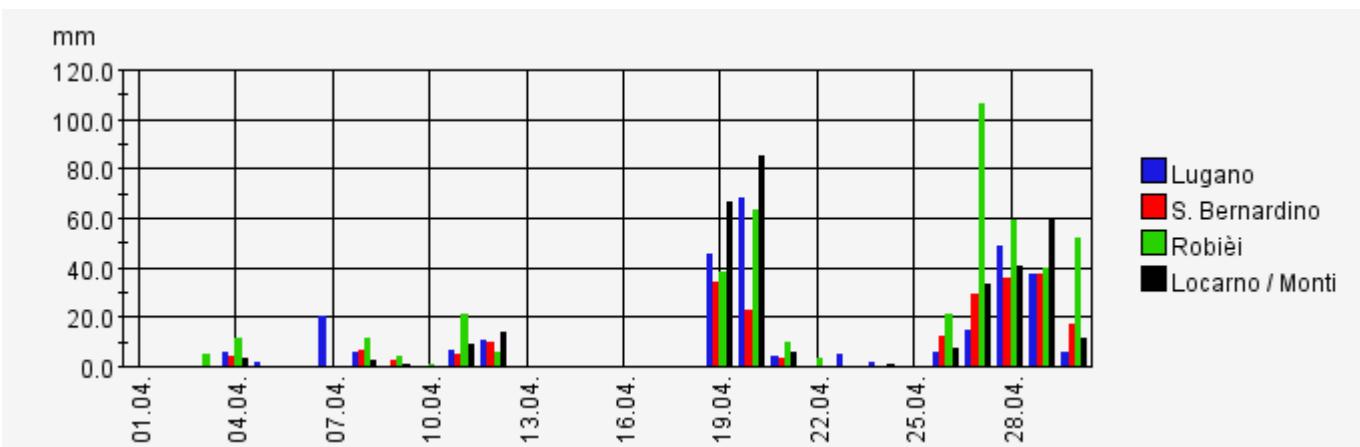
51 giorni: quarta primavera per giorni con pioggia!



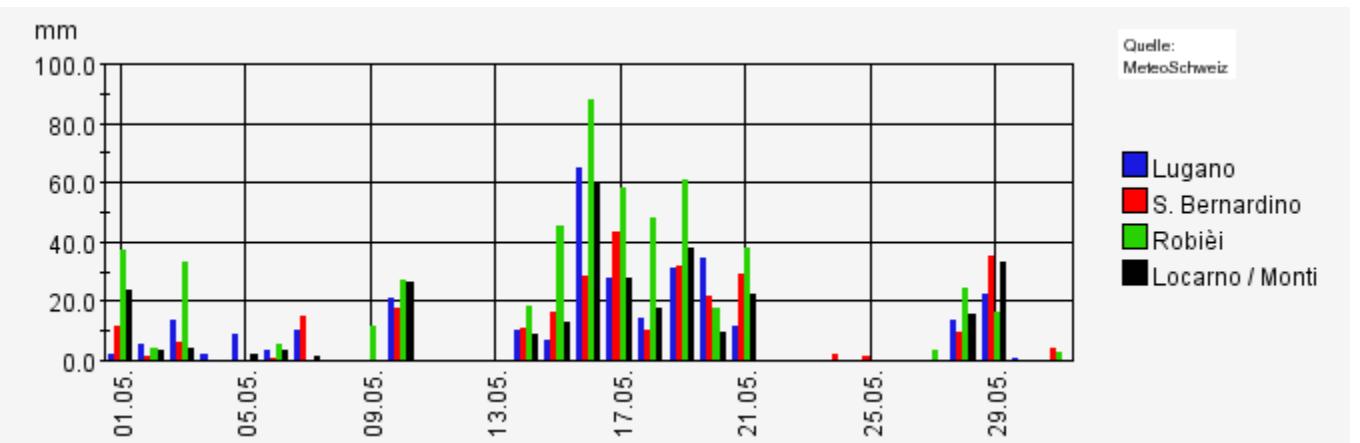
marzo



aprile

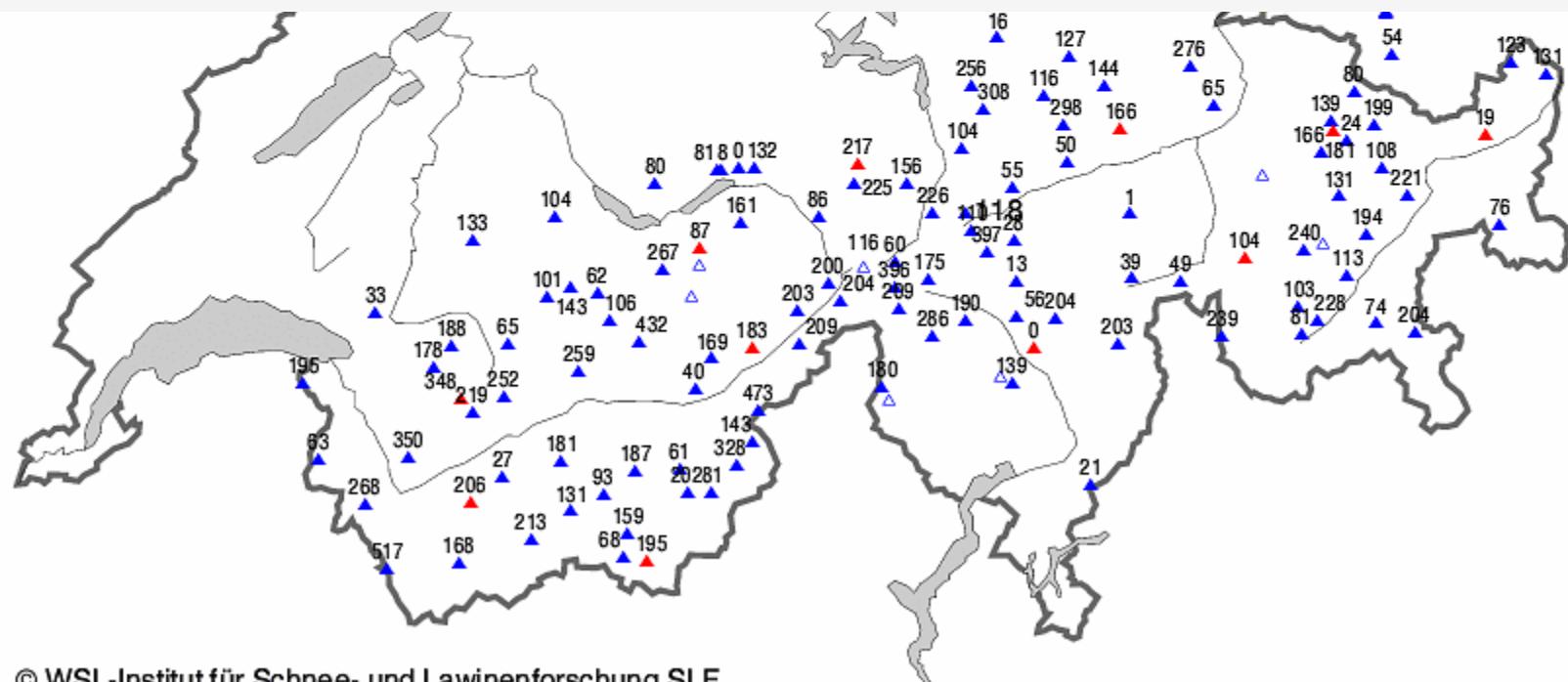
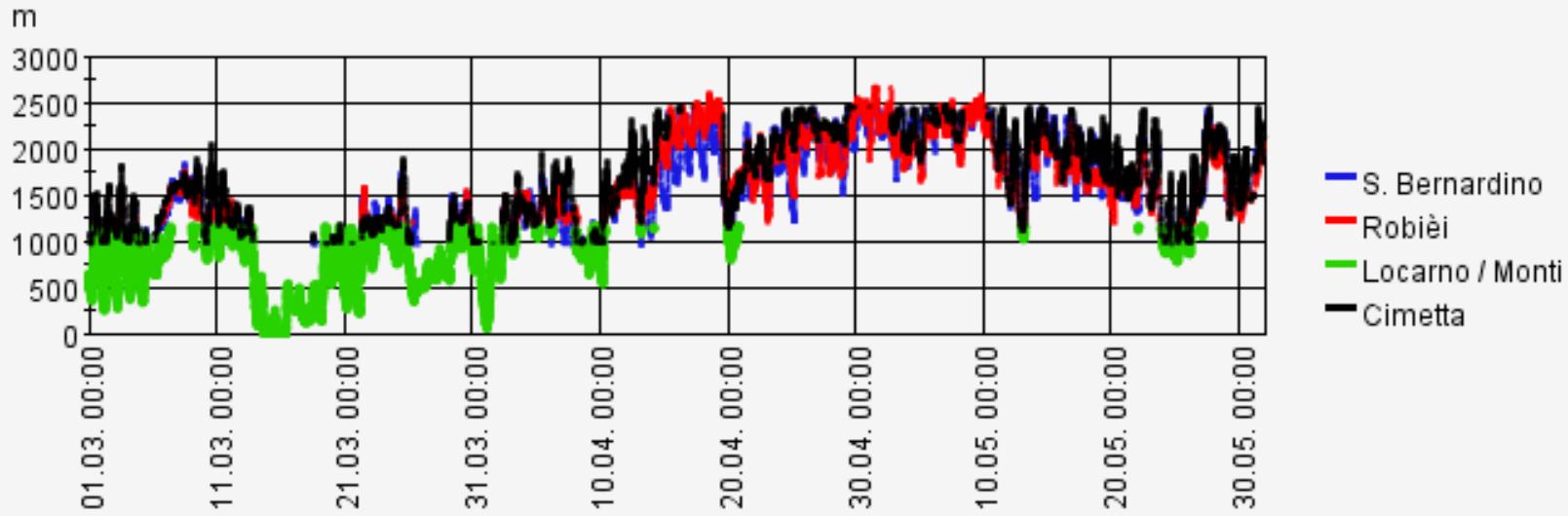


maggio





Limite delle nevicate e neve a fine maggio





Schneehöhe

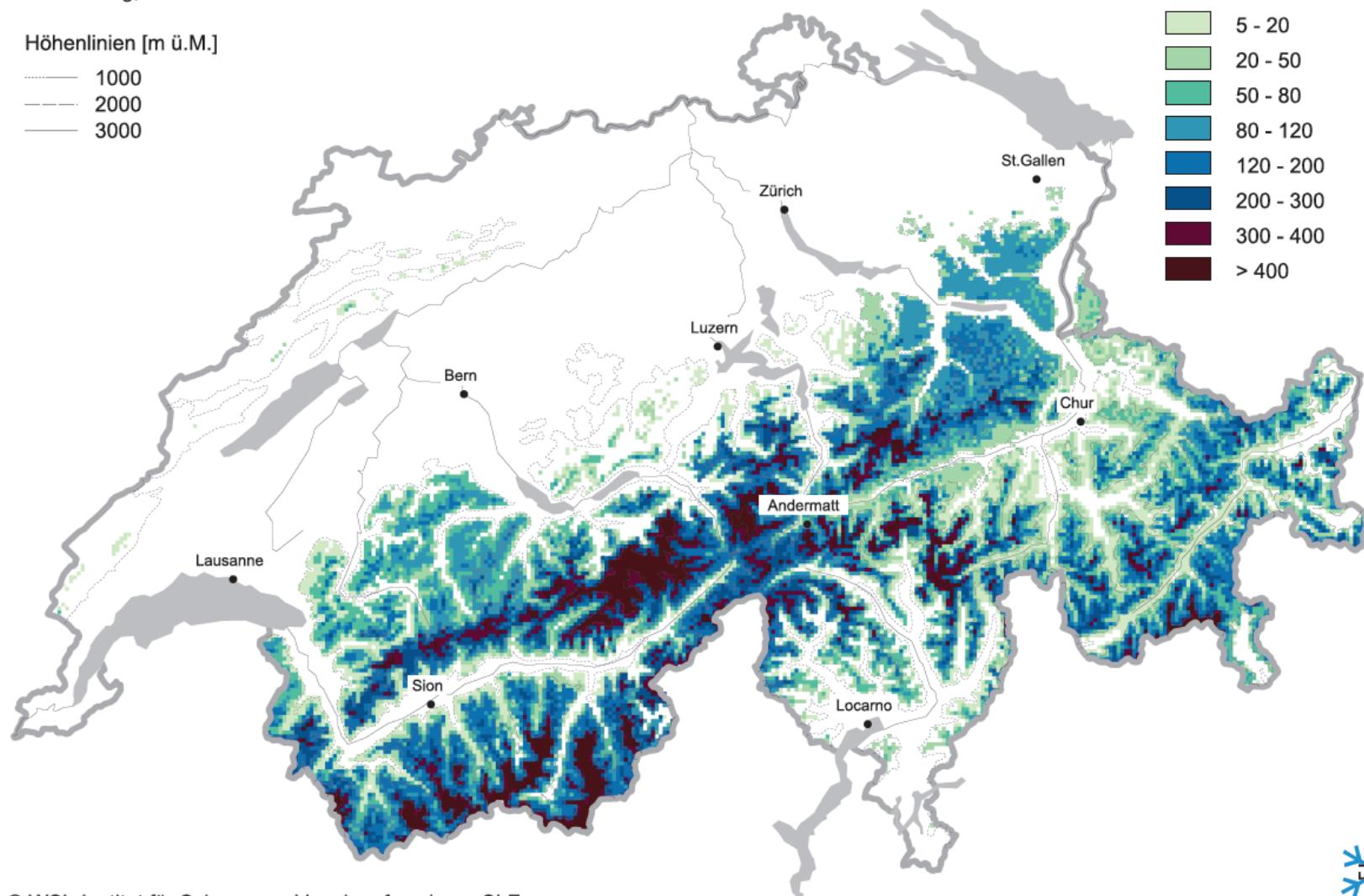
Donnerstag, 30. Mai 2013

Höhenlinien [m ü.M.]

- 1000
- 2000
- 3000

Schneehöhe [cm]

- 0 - 5
- 5 - 20
- 20 - 50
- 50 - 80
- 80 - 120
- 120 - 200
- 200 - 300
- 300 - 400
- > 400

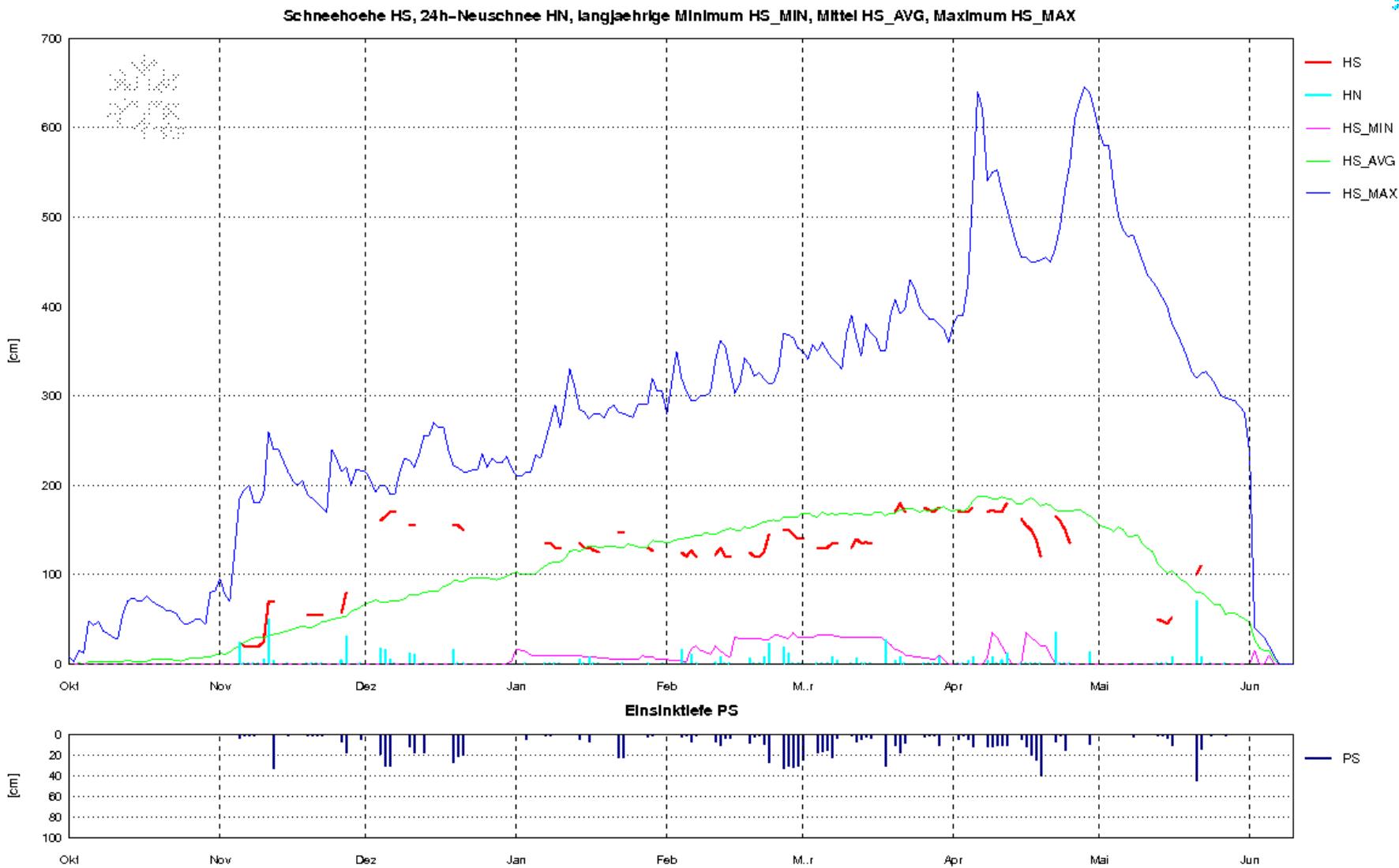




Neve Robiei

Winter 2012/13

Robiei 1890m (6RO)





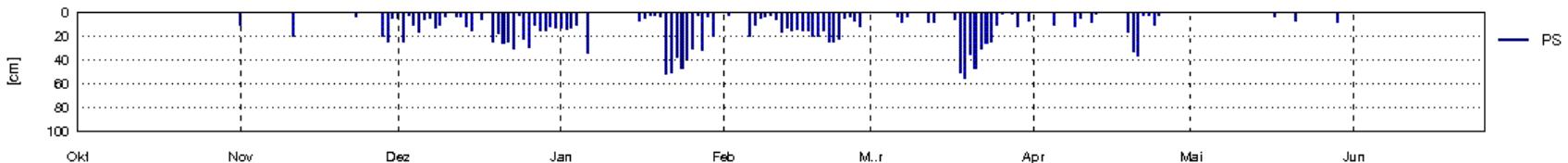
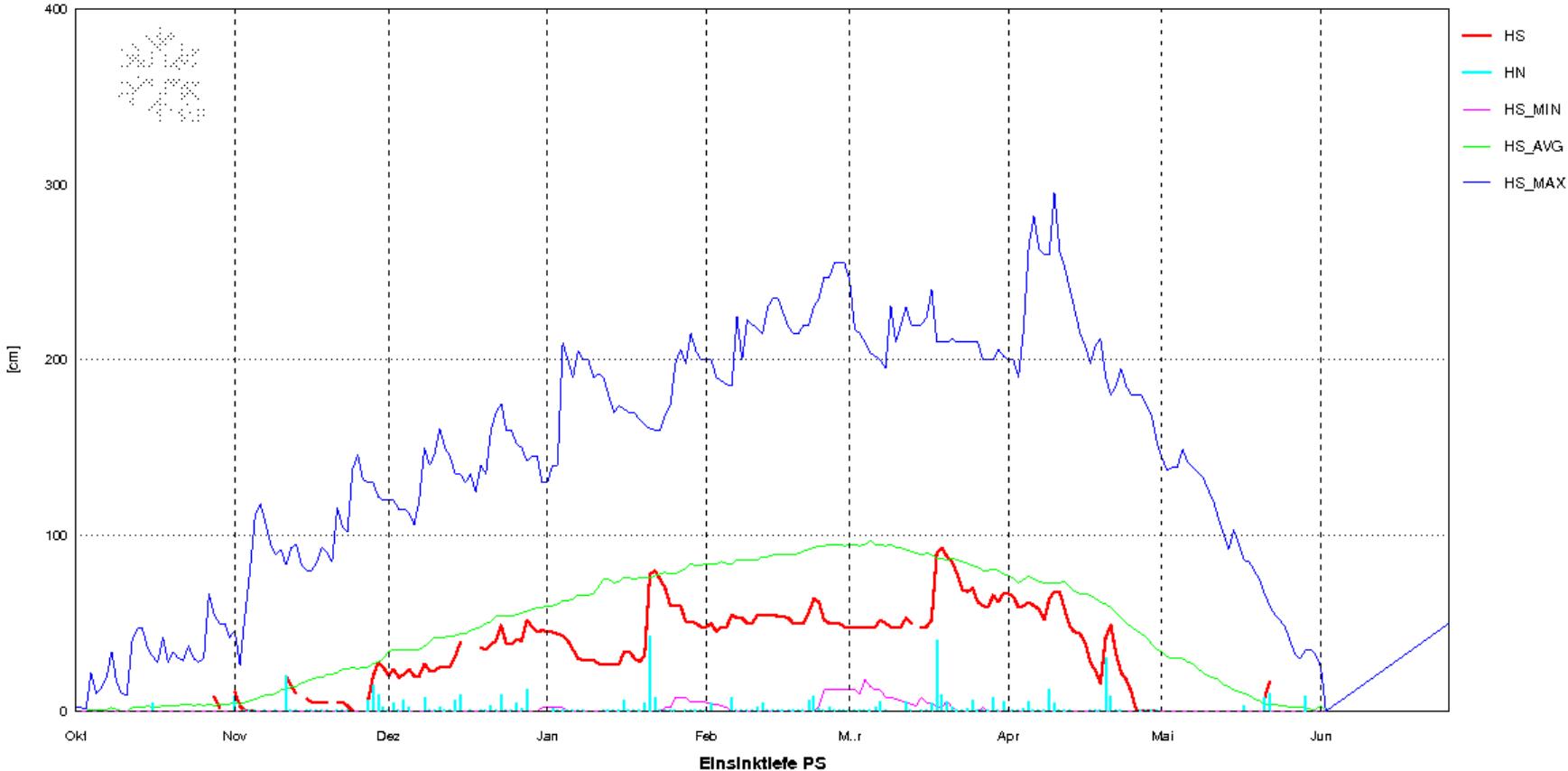
Neve San Bernardino

Winter 2012/13

San Bernardino 1640m (6SB)



Schneehohe HS, 24h-Neuschnee HN, langjährige Minimum HS_MIN, Mittel HS_AVG, Maximum HS_MAX

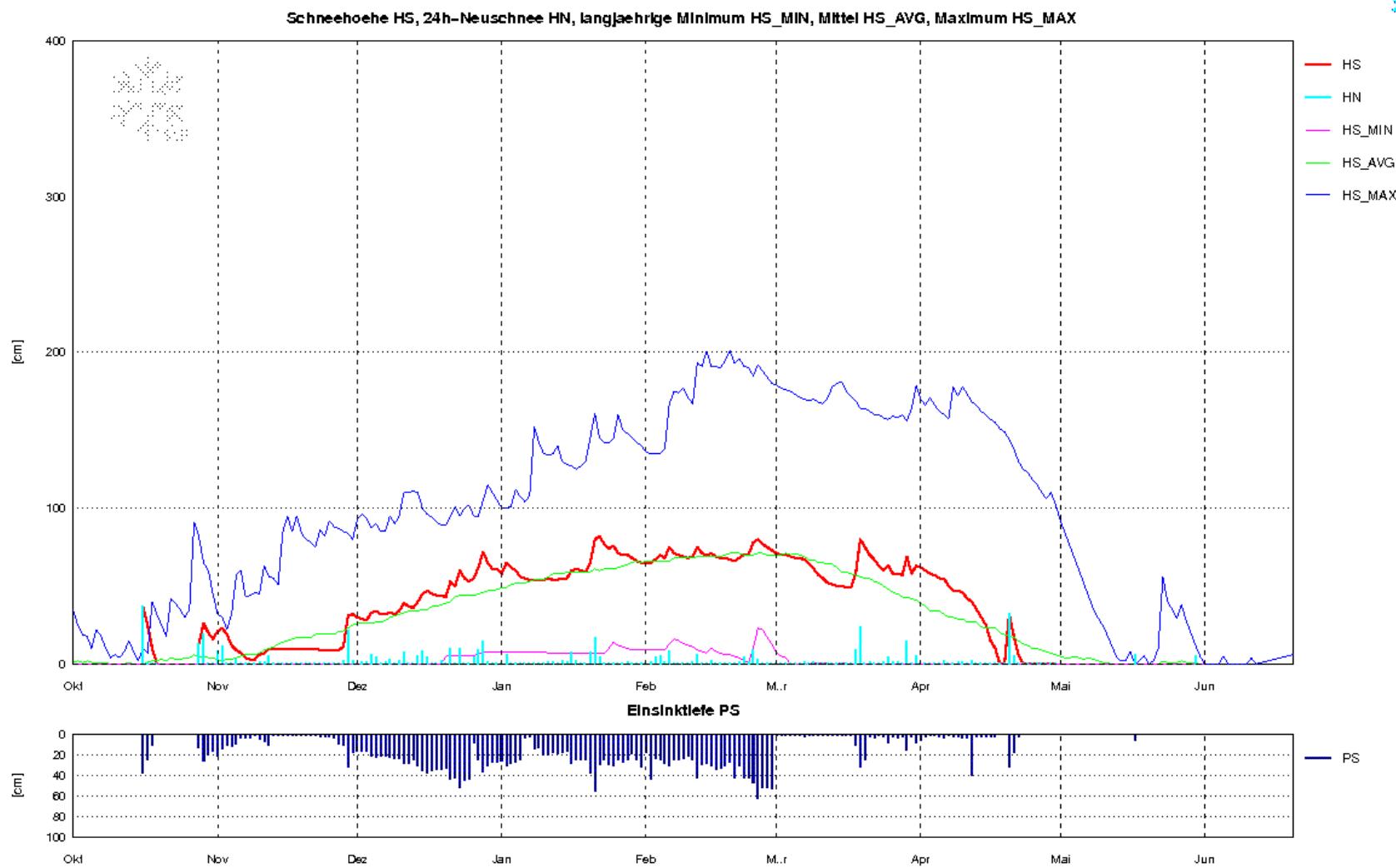




Neve St Moritz

Winter 2012/13

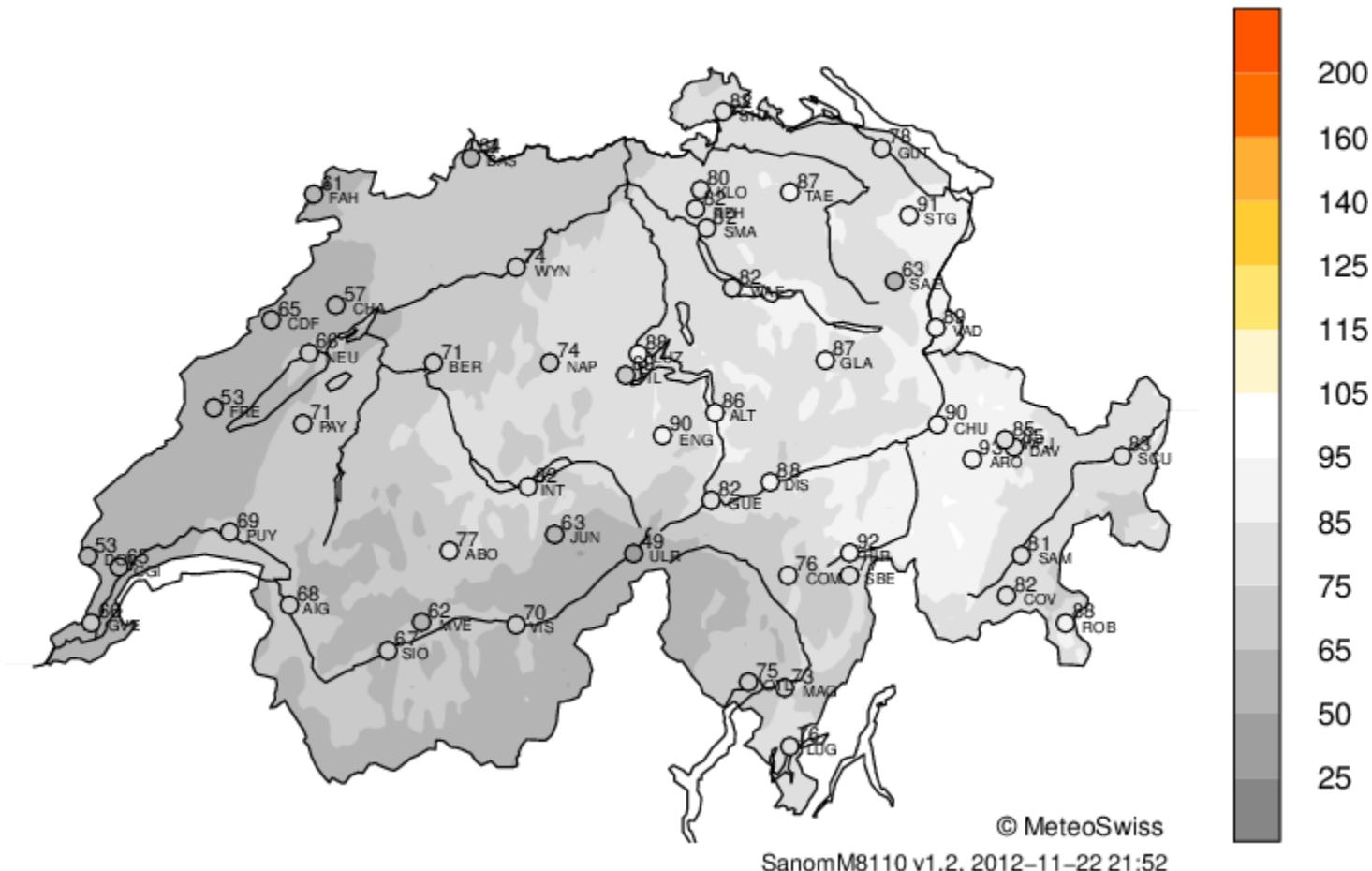
St.Moritz 1890m (7MZ)





Soleggiamiento: anomalia marzo 2013

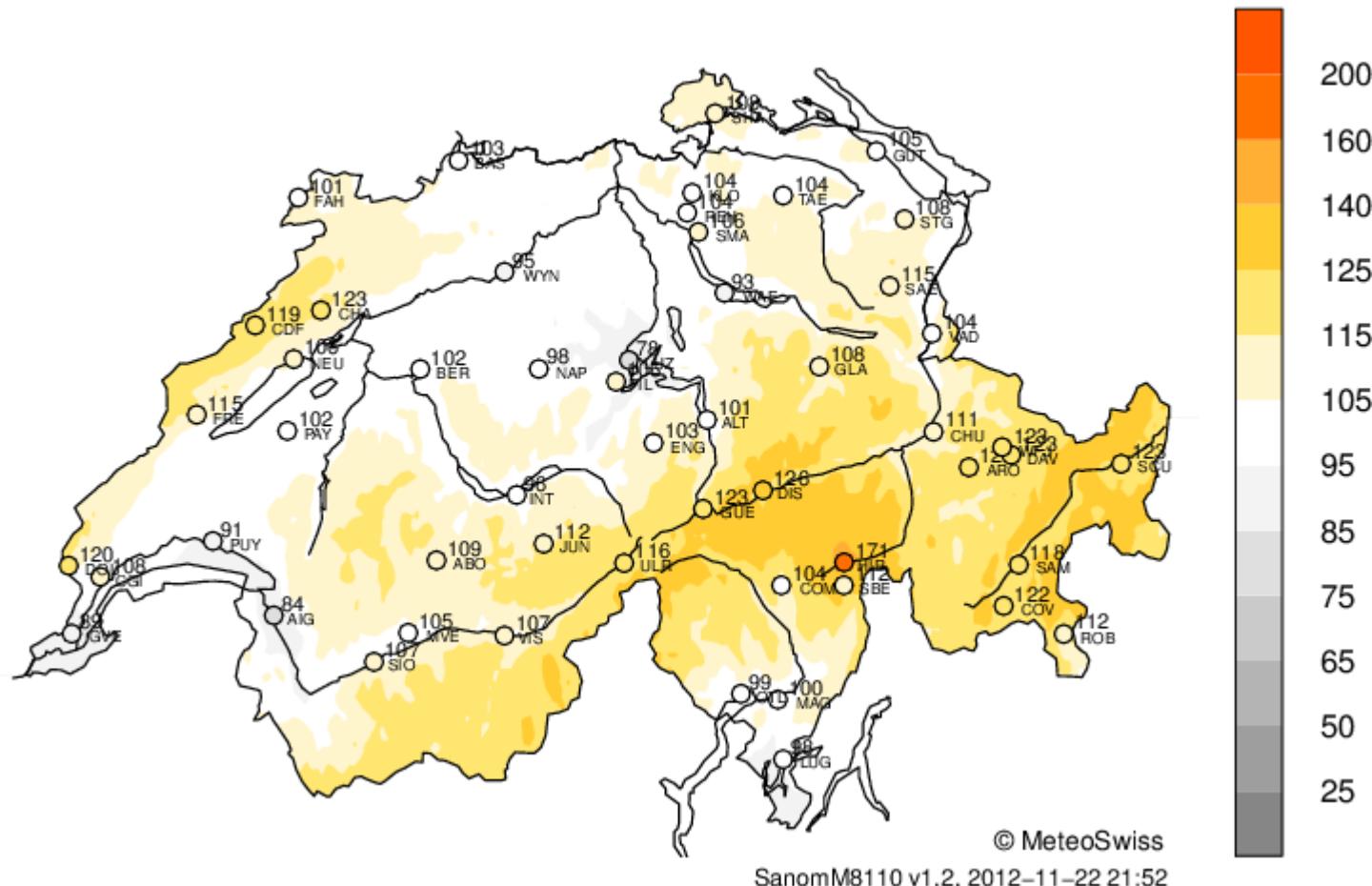
Monthly Sunshine Duration Anomaly (%) Mar 1981 (Ref. 1981–2010)





Soleggiamento: anomalia aprile 2013

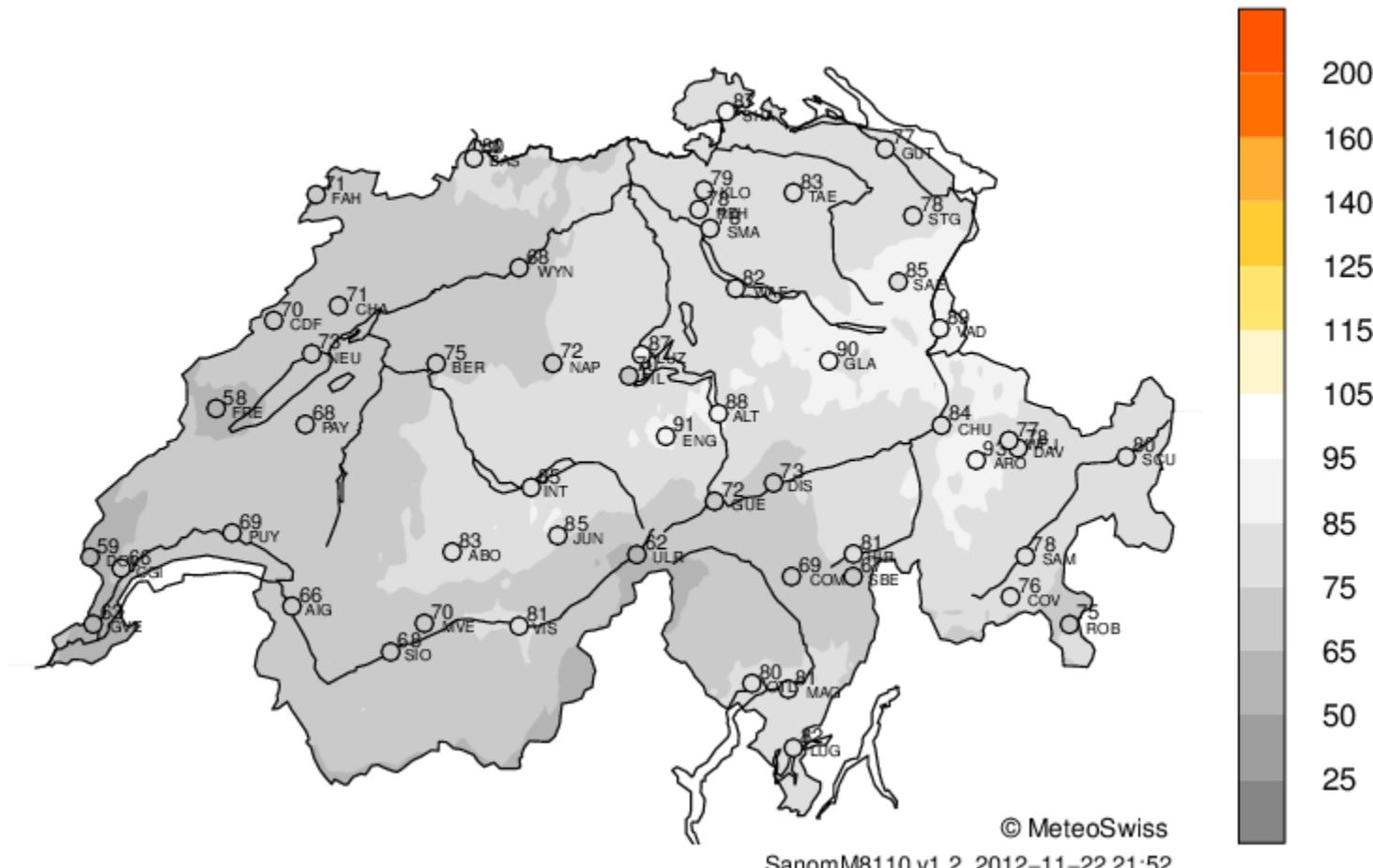
Monthly Sunshine Duration Anomaly (%) Apr 1981 (Ref. 1981–2010)





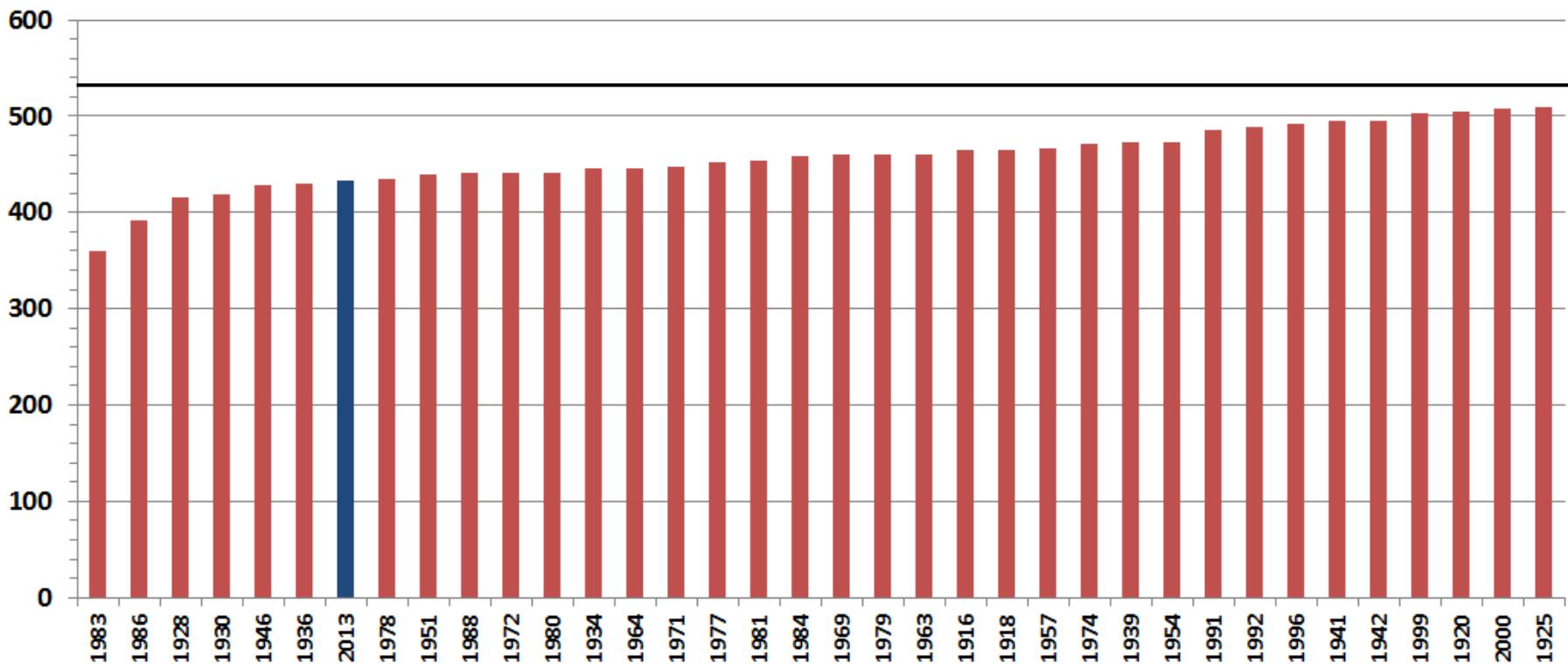
Soleggiamento: anomalia maggio 2013

Monthly Sunshine Duration Anomaly (%) May 1981 (Ref. 1981–2010)





Ore di sole a Lugano

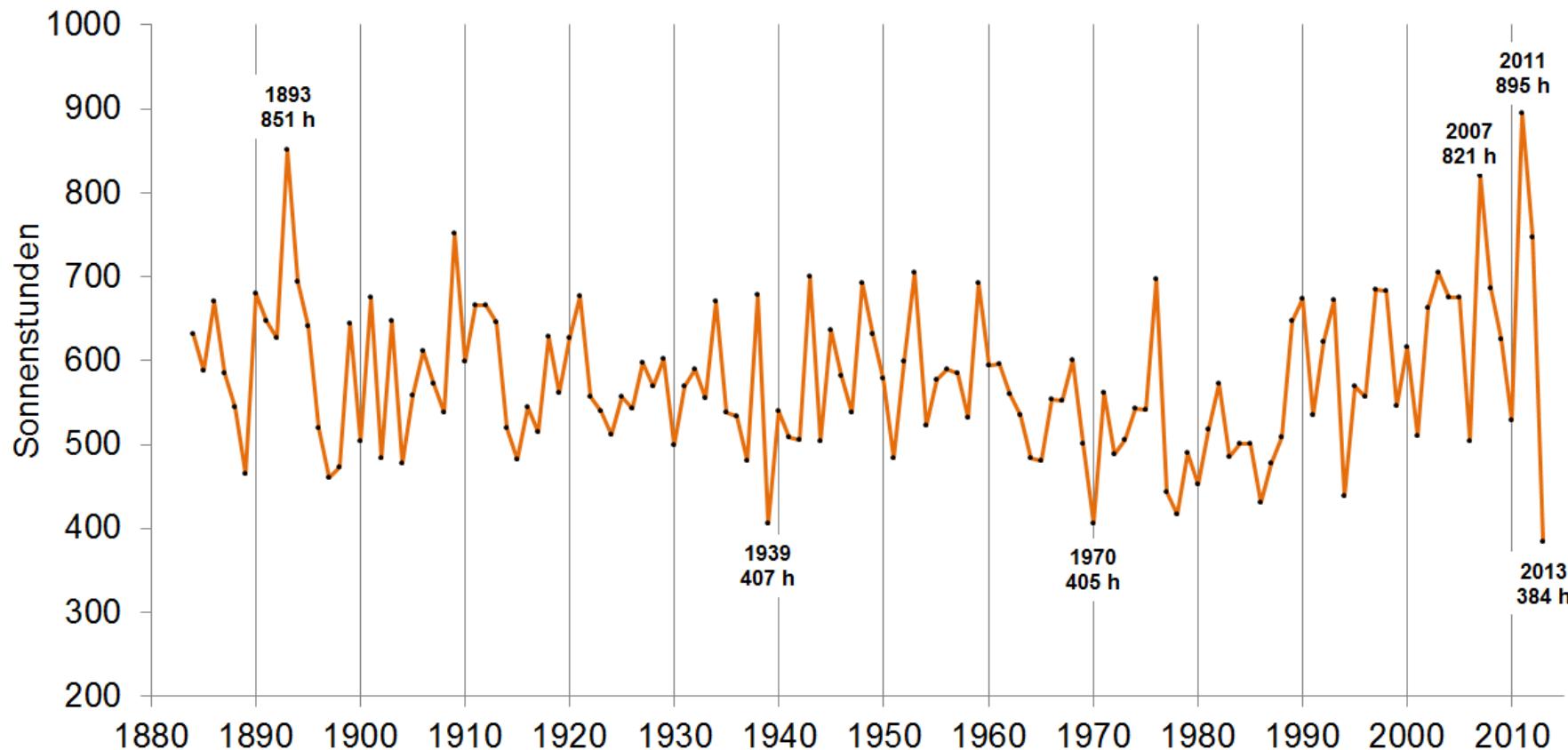


Settima primavera con meno sole dal 1914!



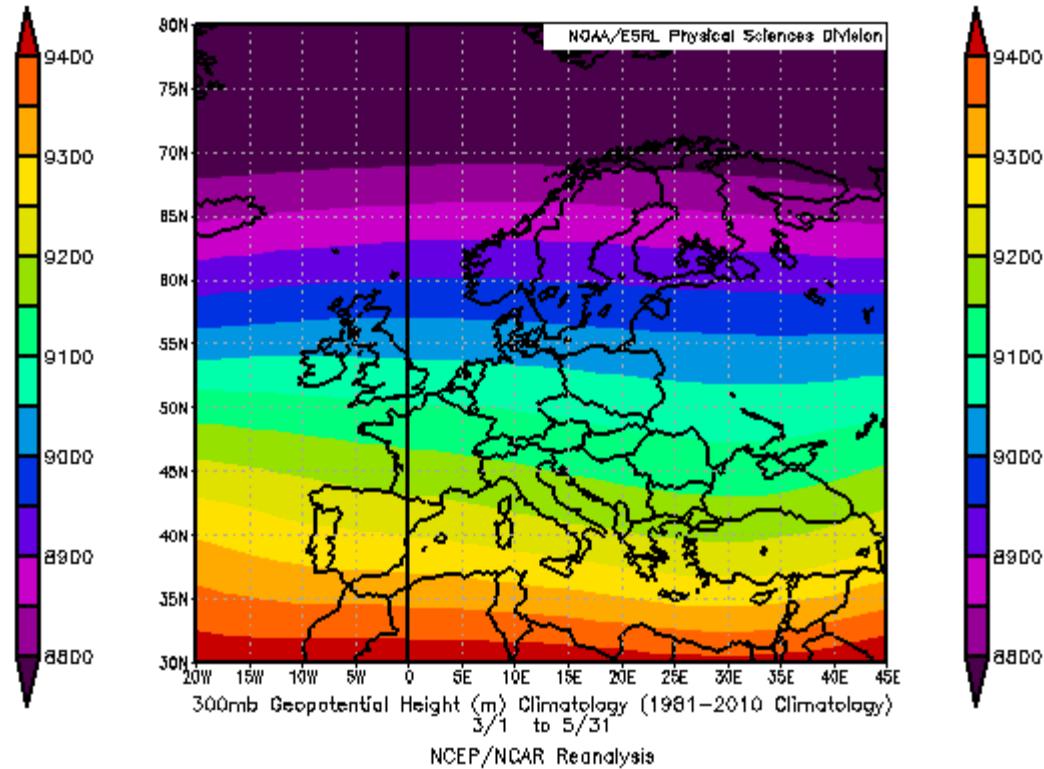
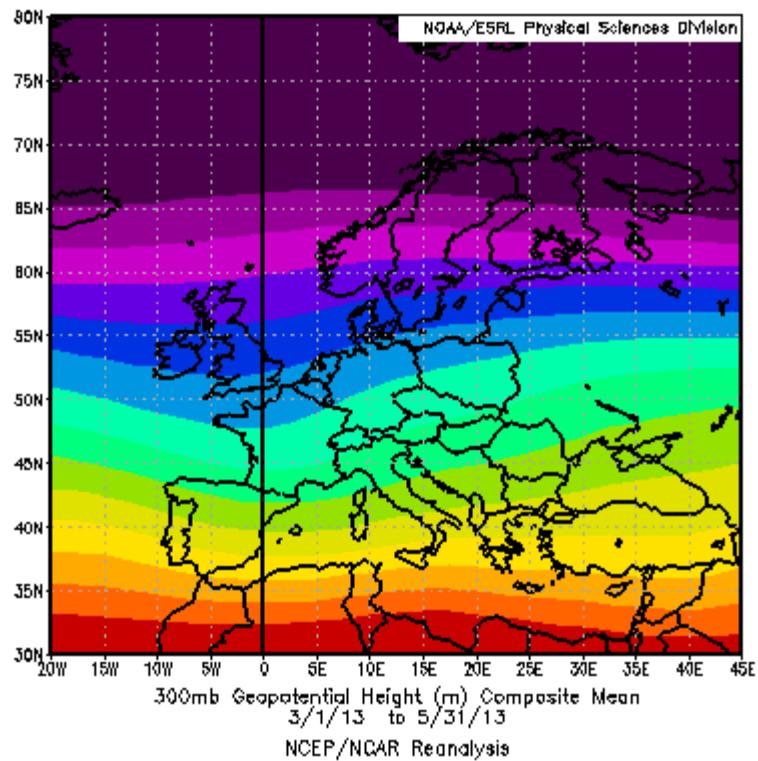
Il peggiore al nord delle Alpi

Sonnenscheindauer Januar - Mai, Zürich-Fluntern 1884 - 2013





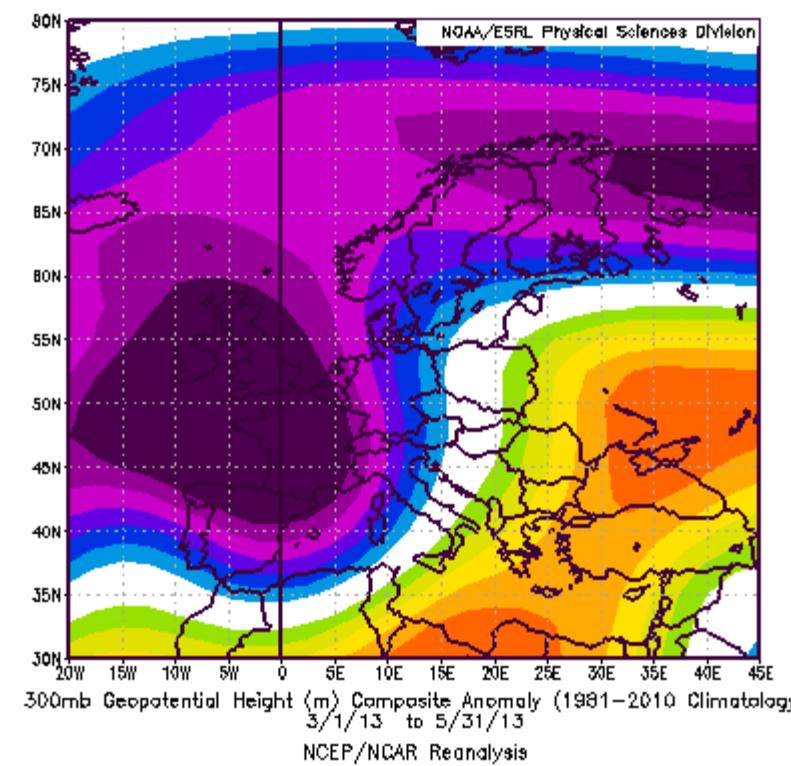
h@300hPa: 2013 vs. media



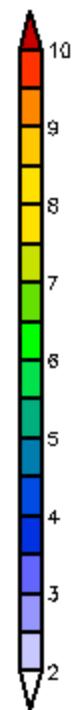
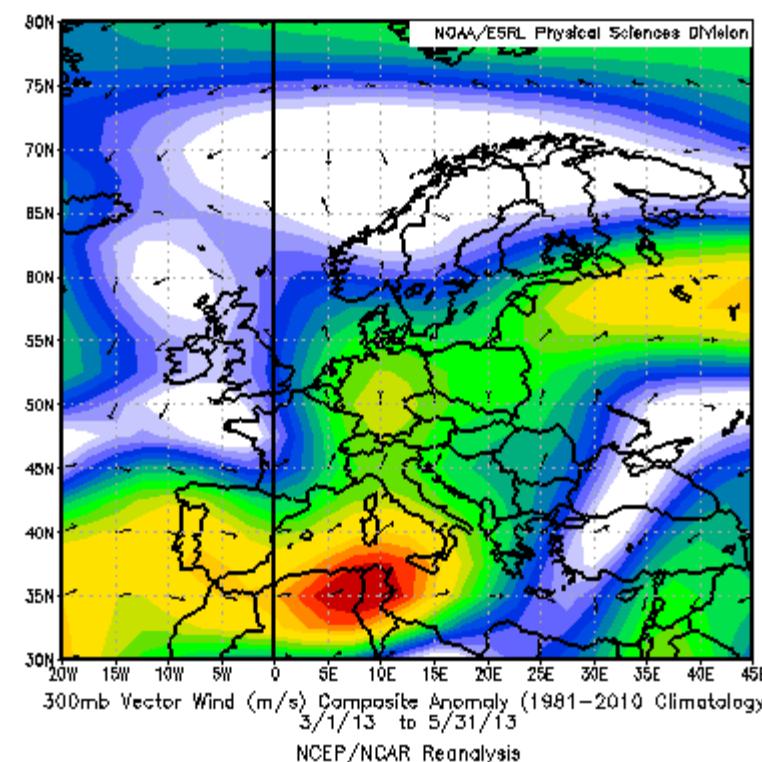


2013 anomalie

h@300hPa



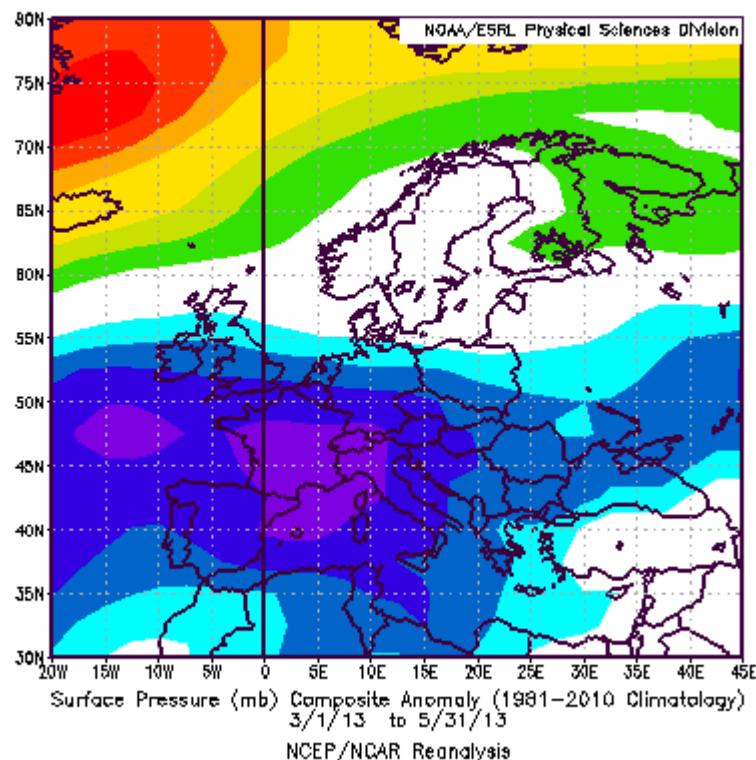
FF@300hPa



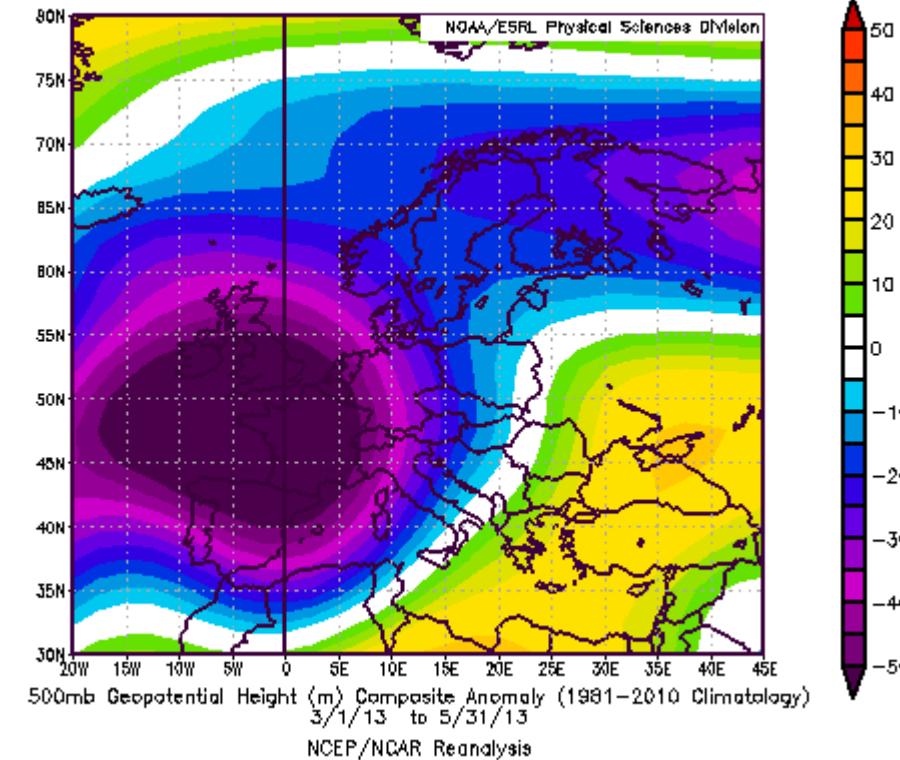


Anomalia primavera 2013

pressione al suolo hPa



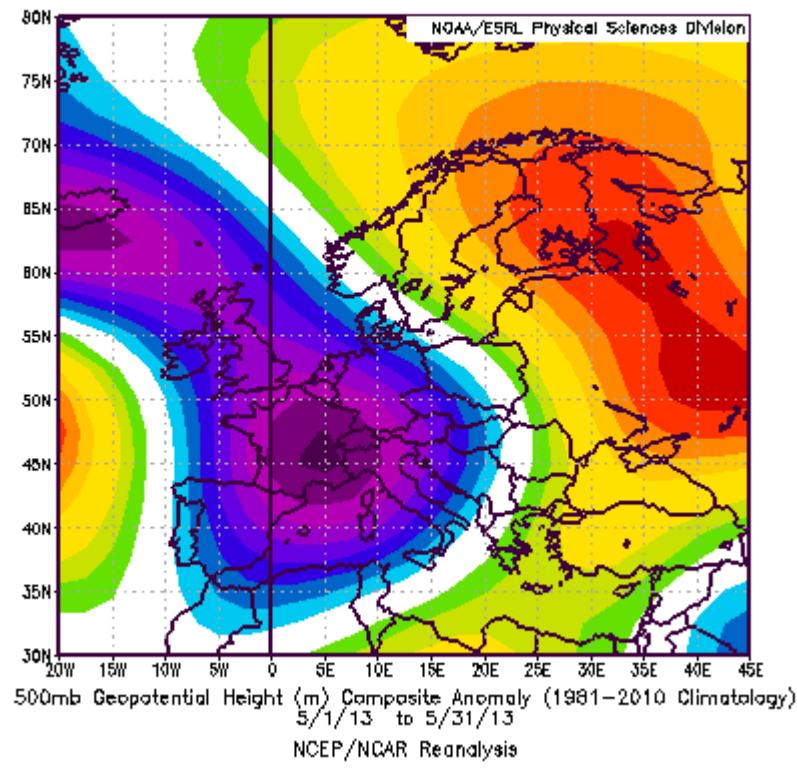
h@500hPa



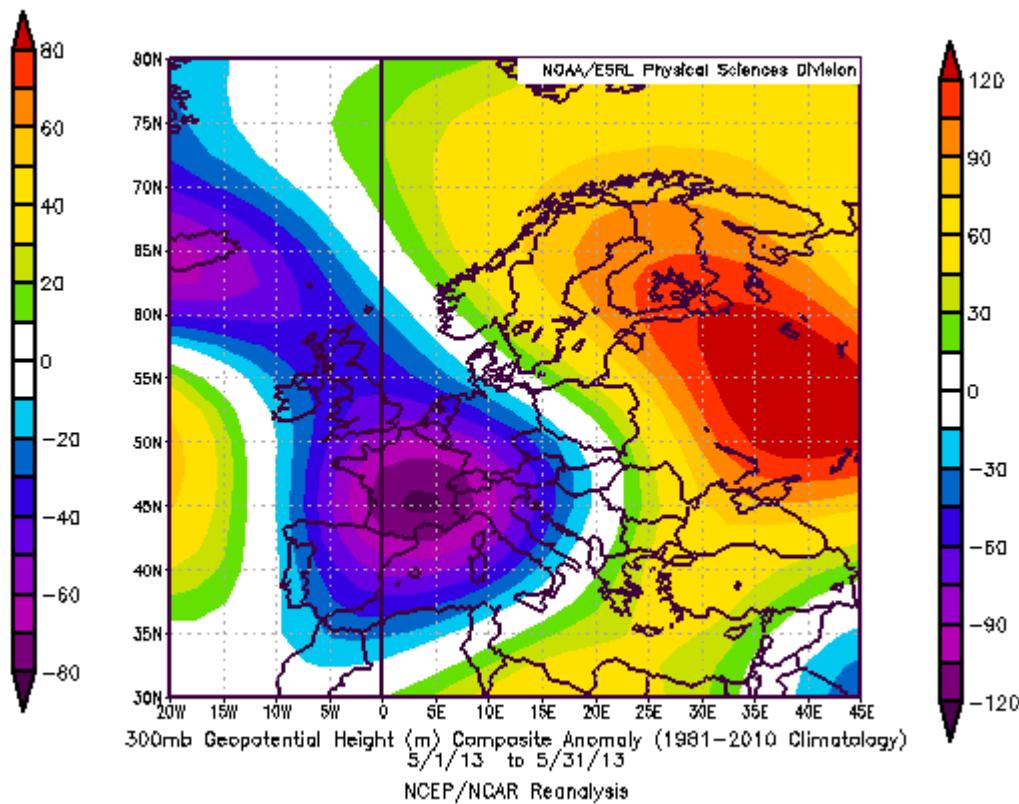


Anomalia maggio 2013

h@500hPa



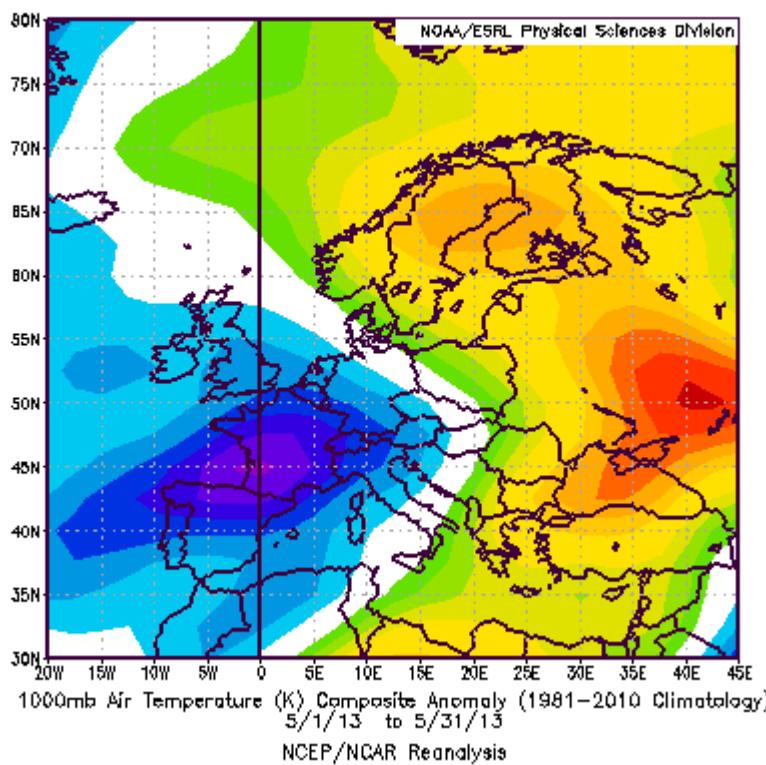
h@300hPa



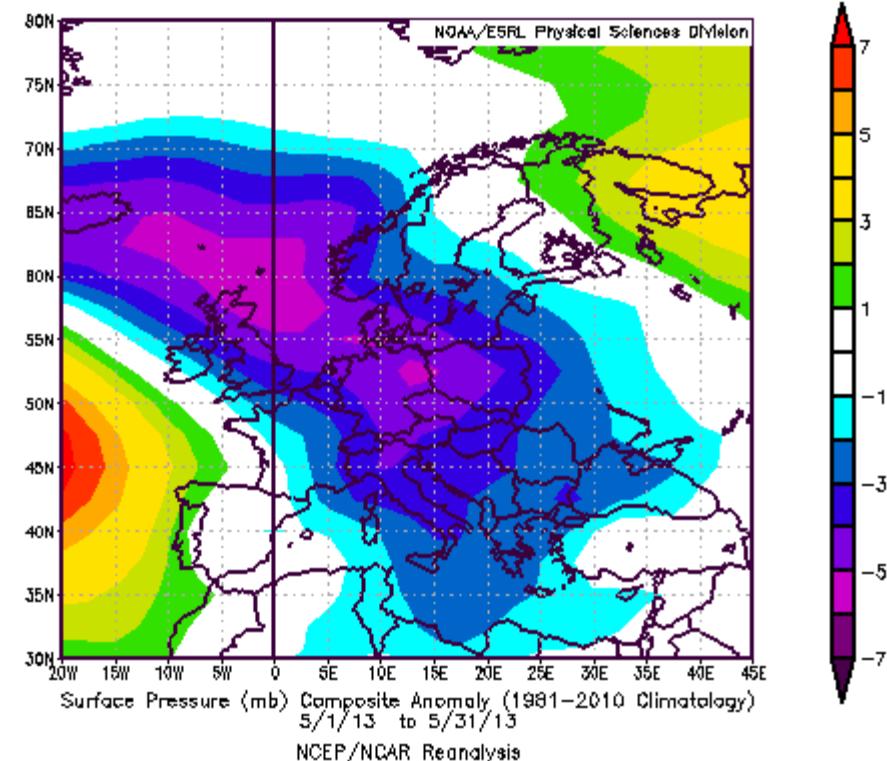


Anomalia maggio 2013

T@1000hPa

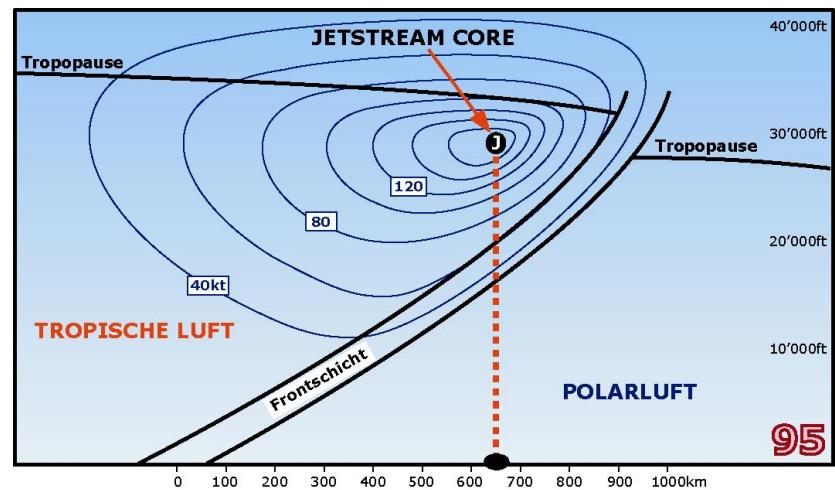
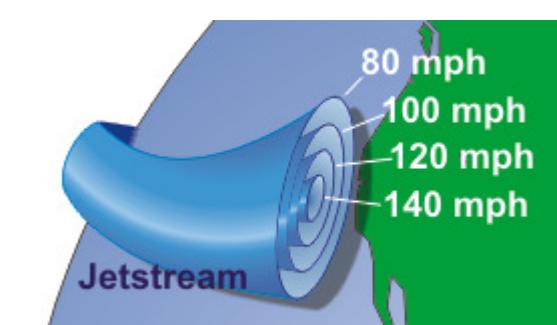
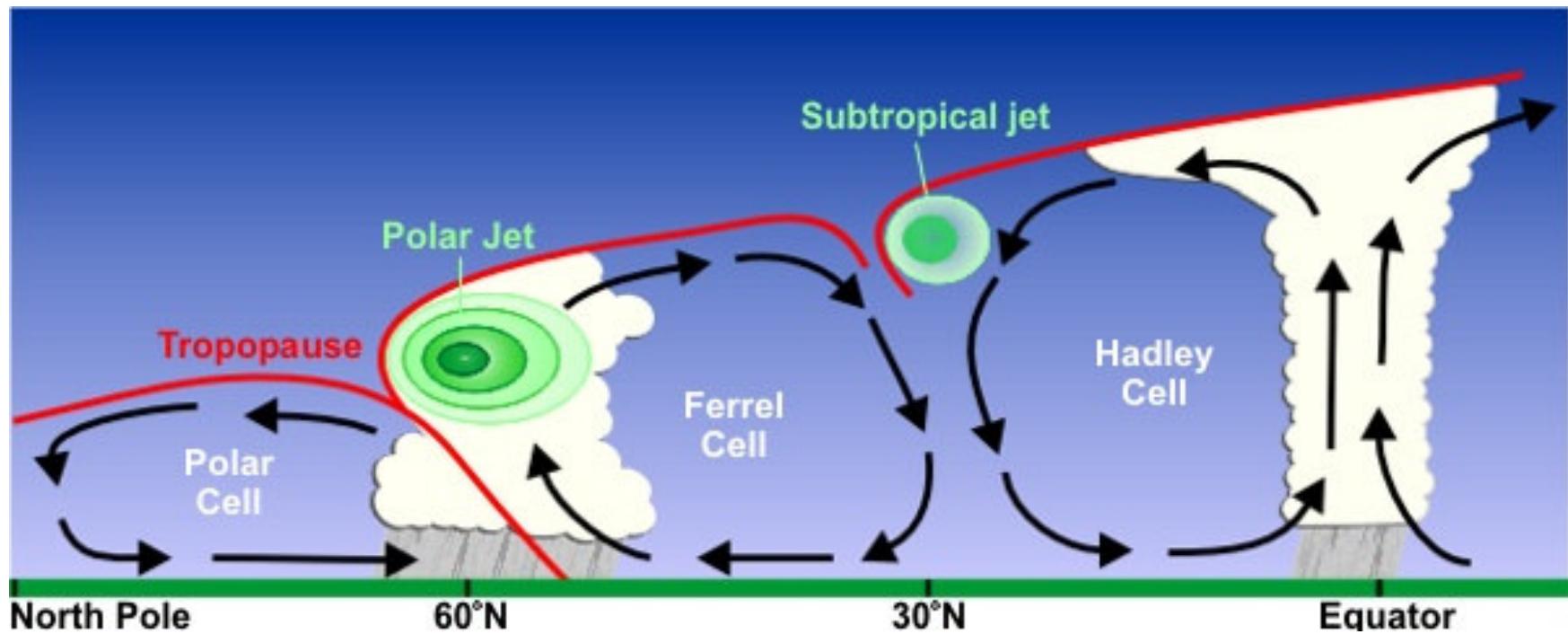


Pressione al suolo



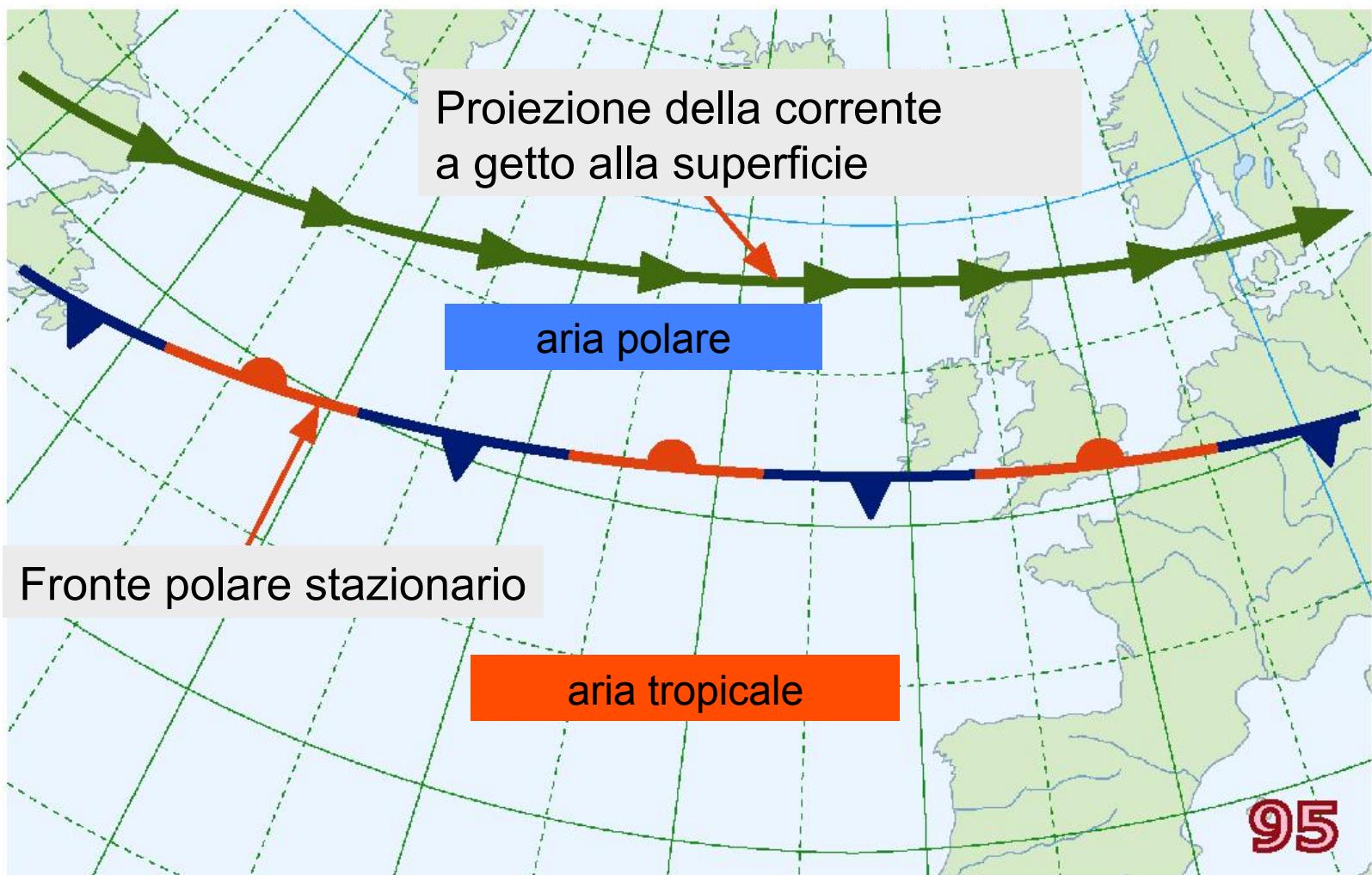


Jet stream

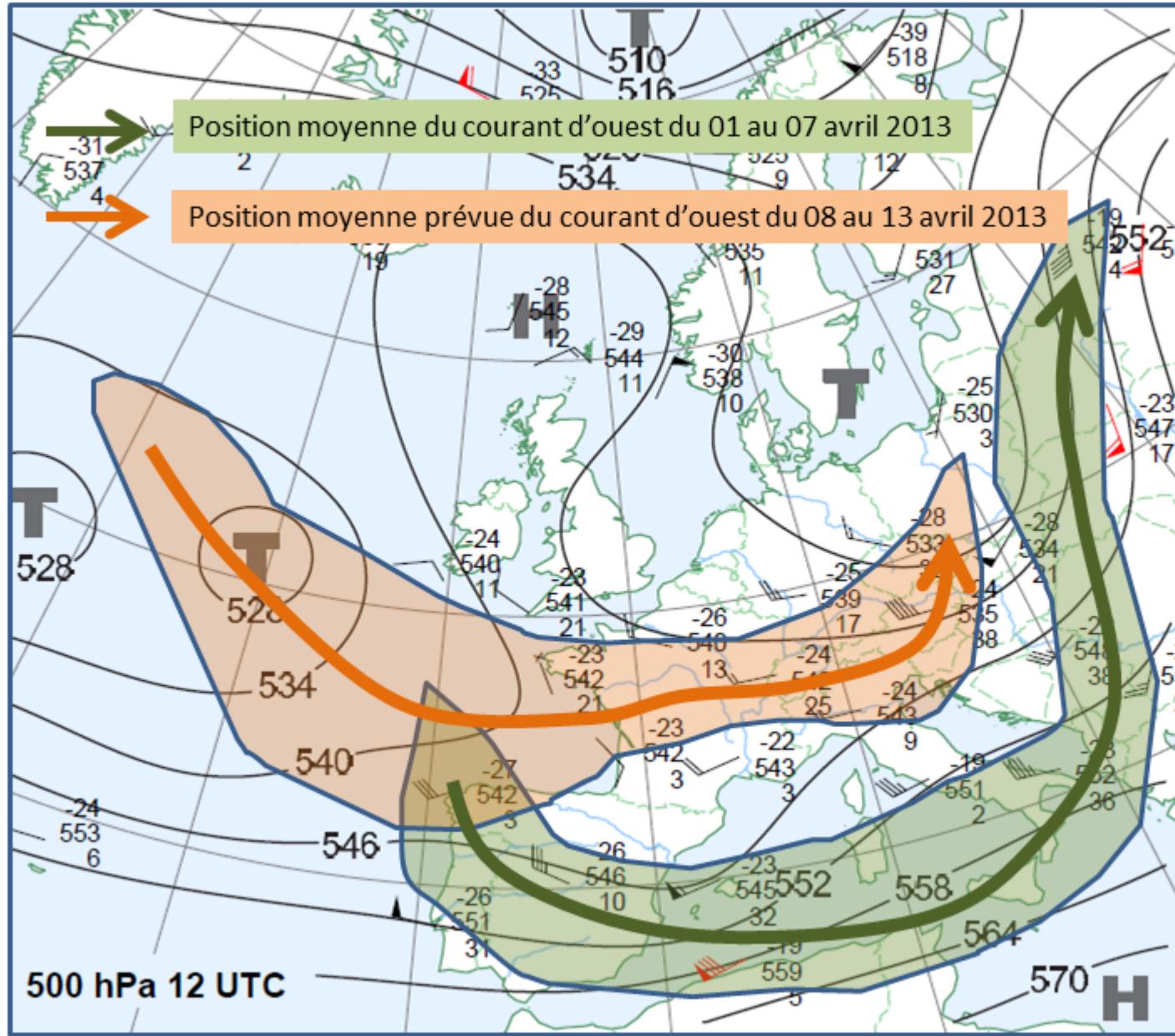




Il fronte polare stazionario

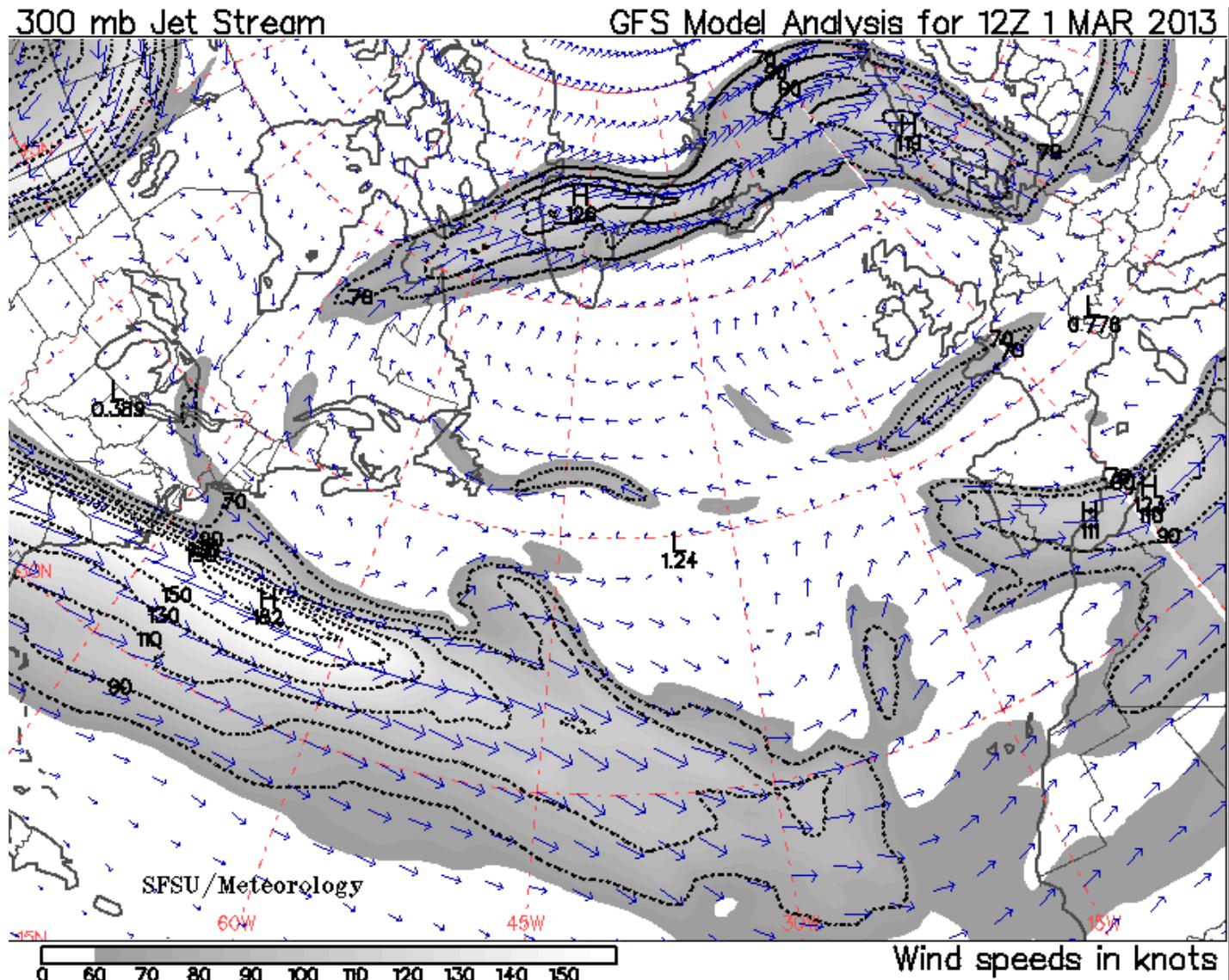


Fonte: K.H. Hack, Flugwetter 2 (2004)





Fonte: sito internet <http://squall.sfsu.edu/crws/archive/jetstr>

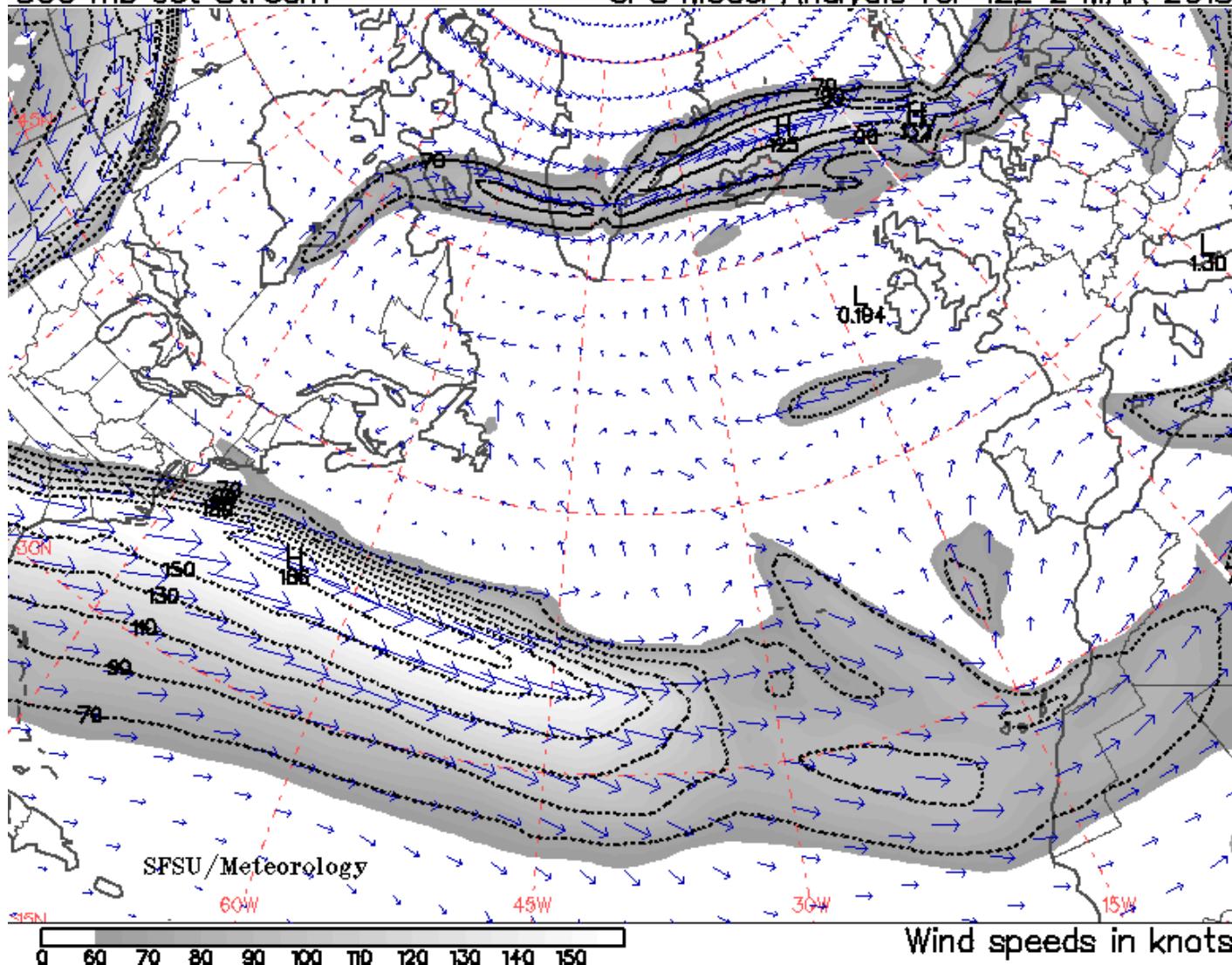


Mauro Guerini



300 mb Jet Stream

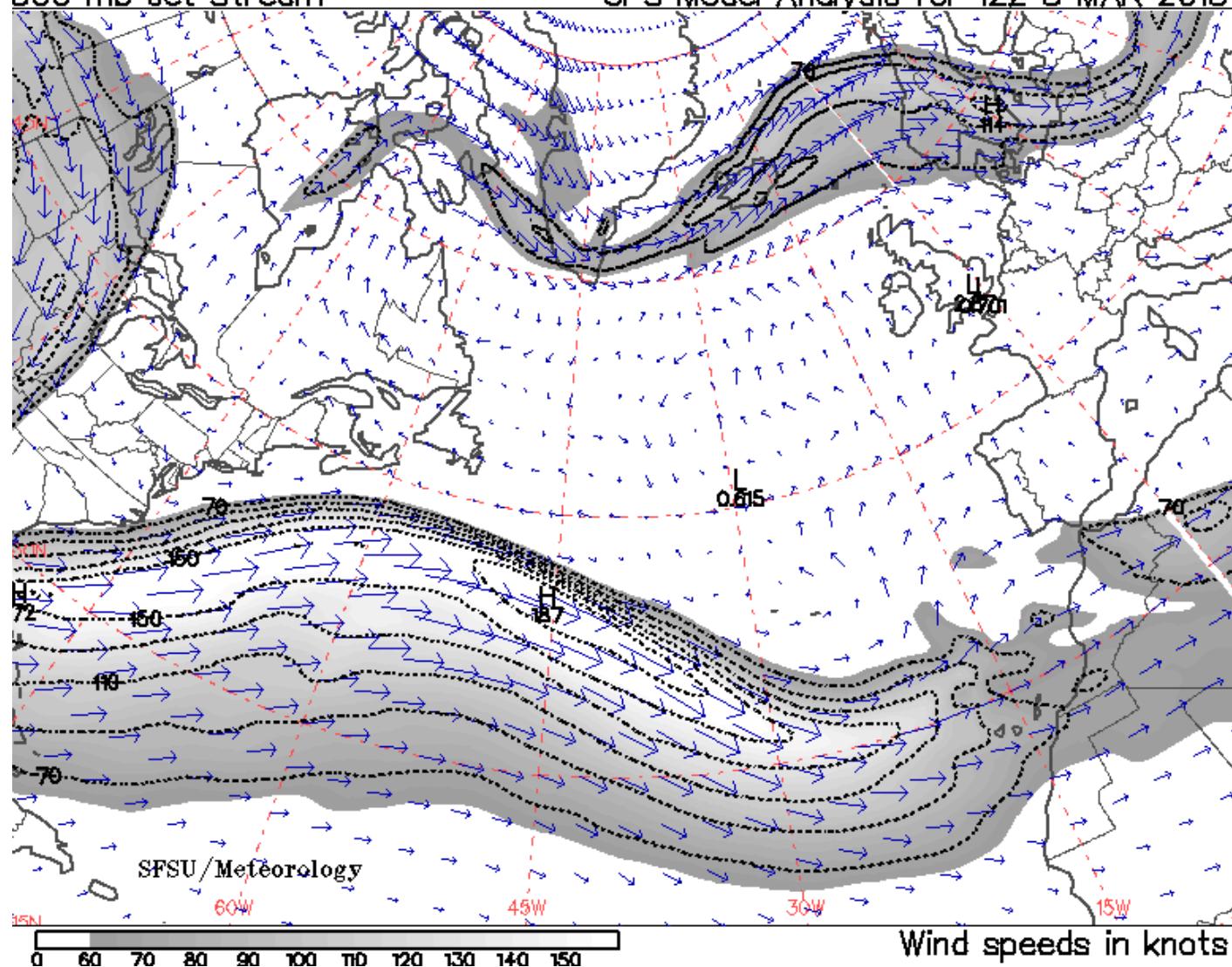
GFS Model Analysis for 12Z 2 MAR 2013





300 mb Jet Stream

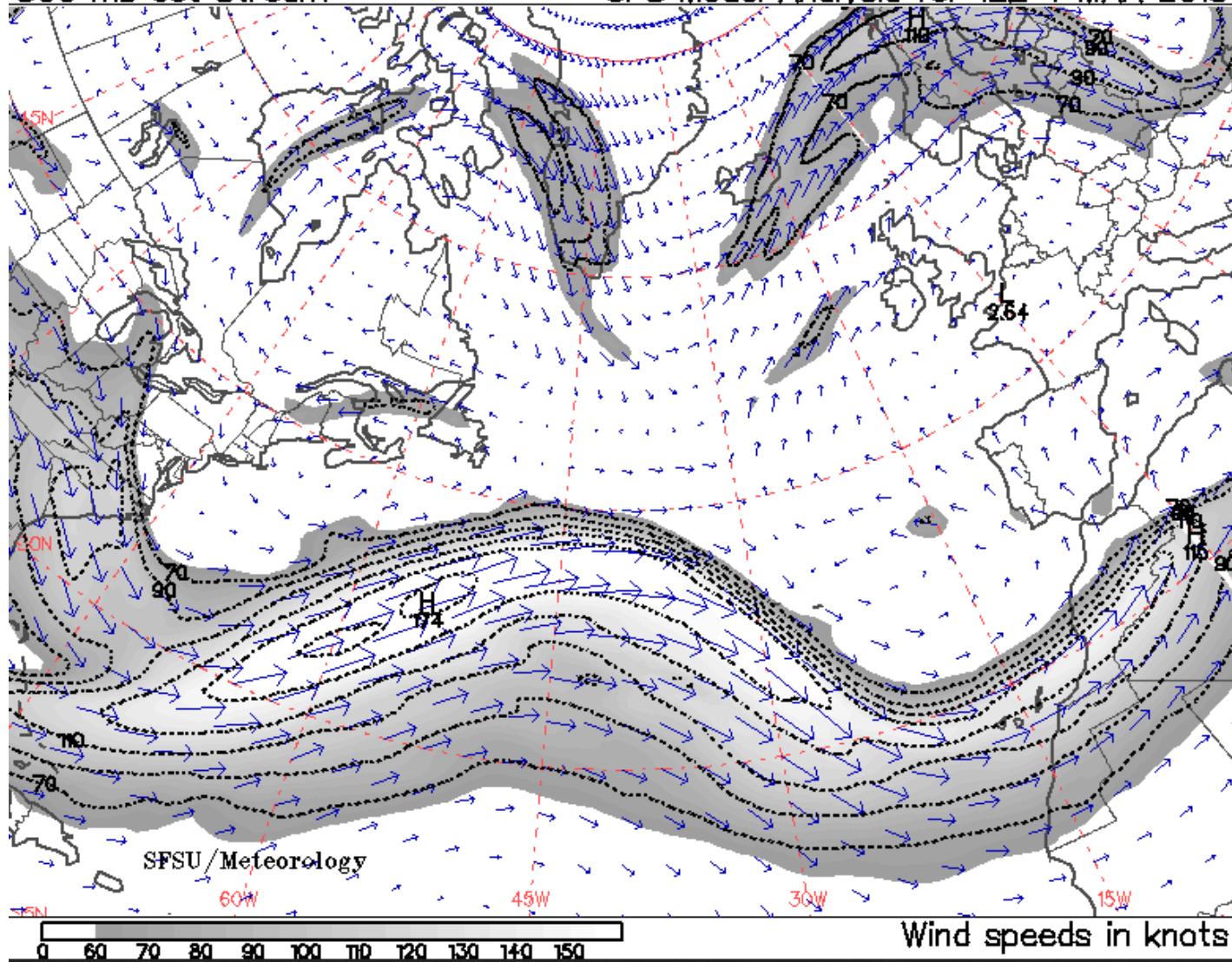
GFS Model Analysis for 12Z 3 MAR 2013





300 mb Jet Stream

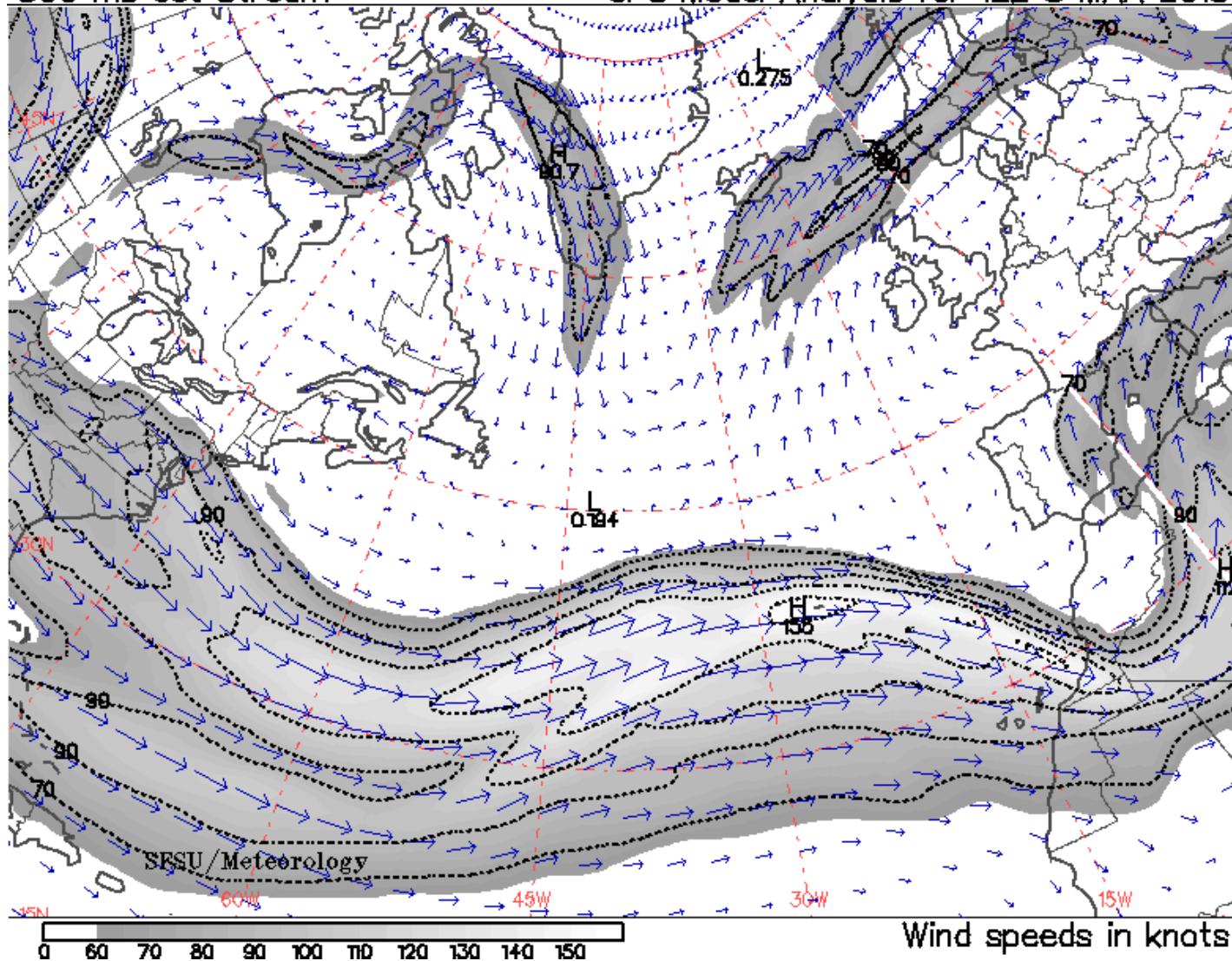
GFS Model Analysis for 12Z 4 MAR 2013





300 mb Jet Stream

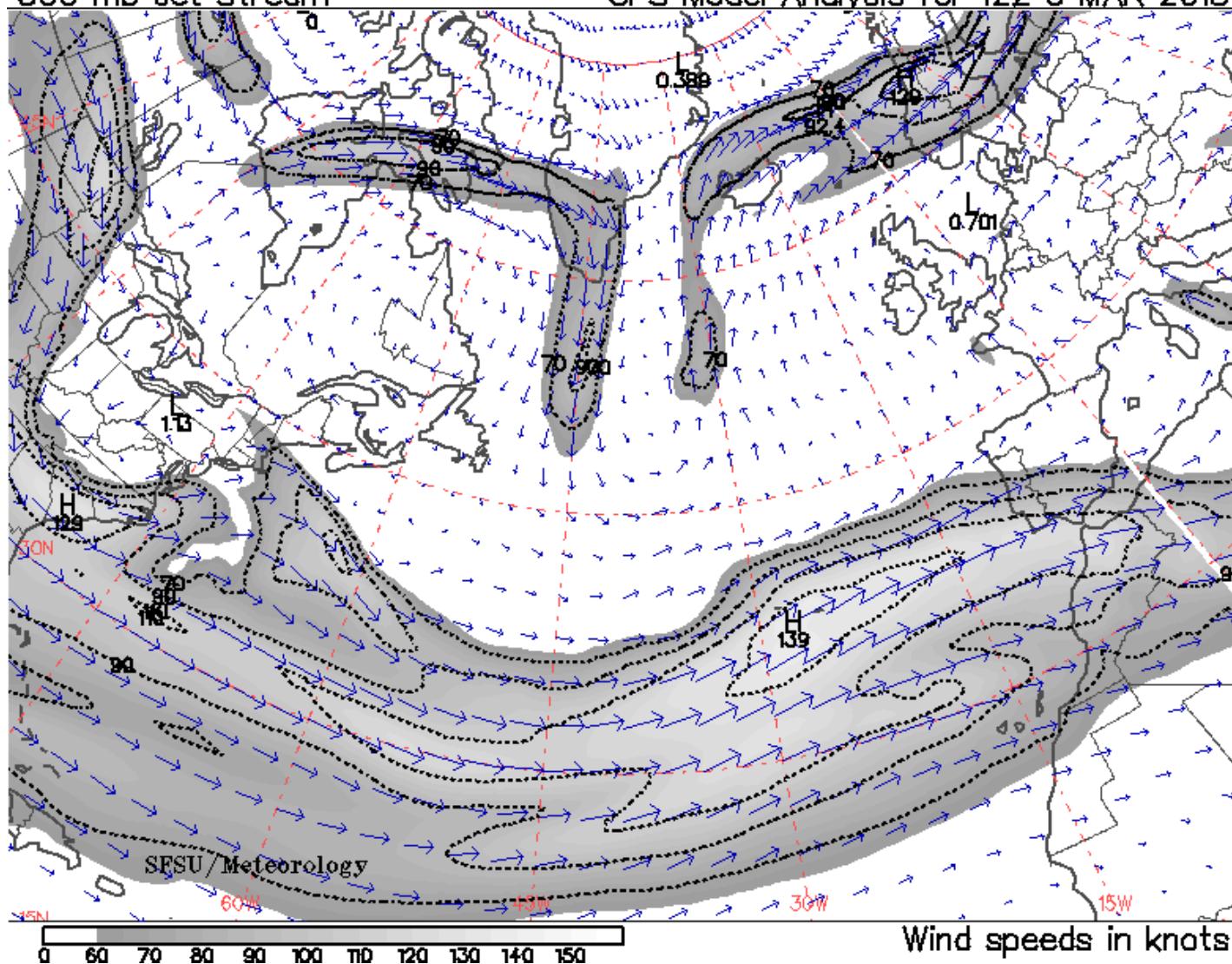
GFS Model Analysis for 12Z 5 MAR 2013





300 mb Jet Stream

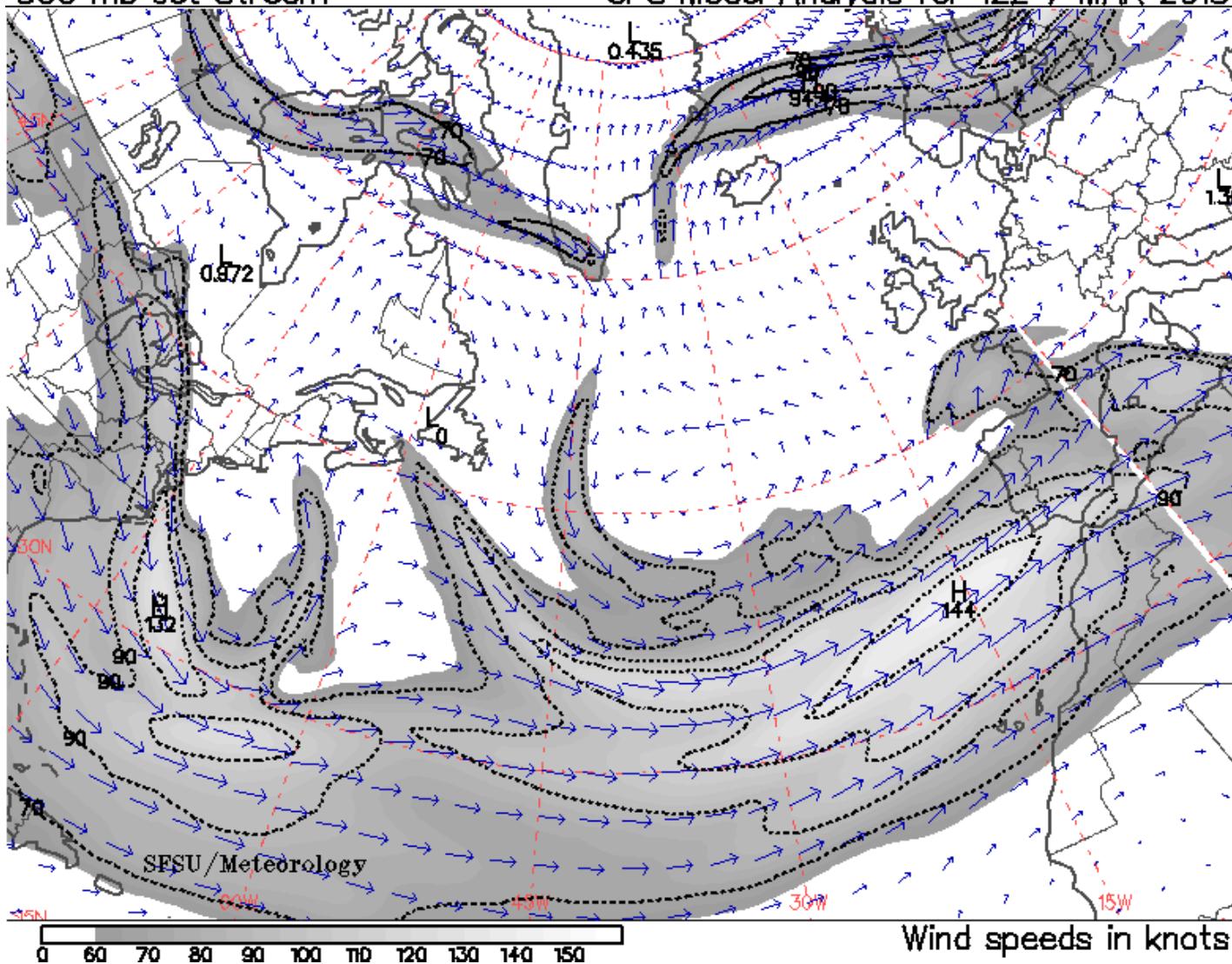
GFS Model Analysis for 12Z 6 MAR 2013





300 mb Jet Stream

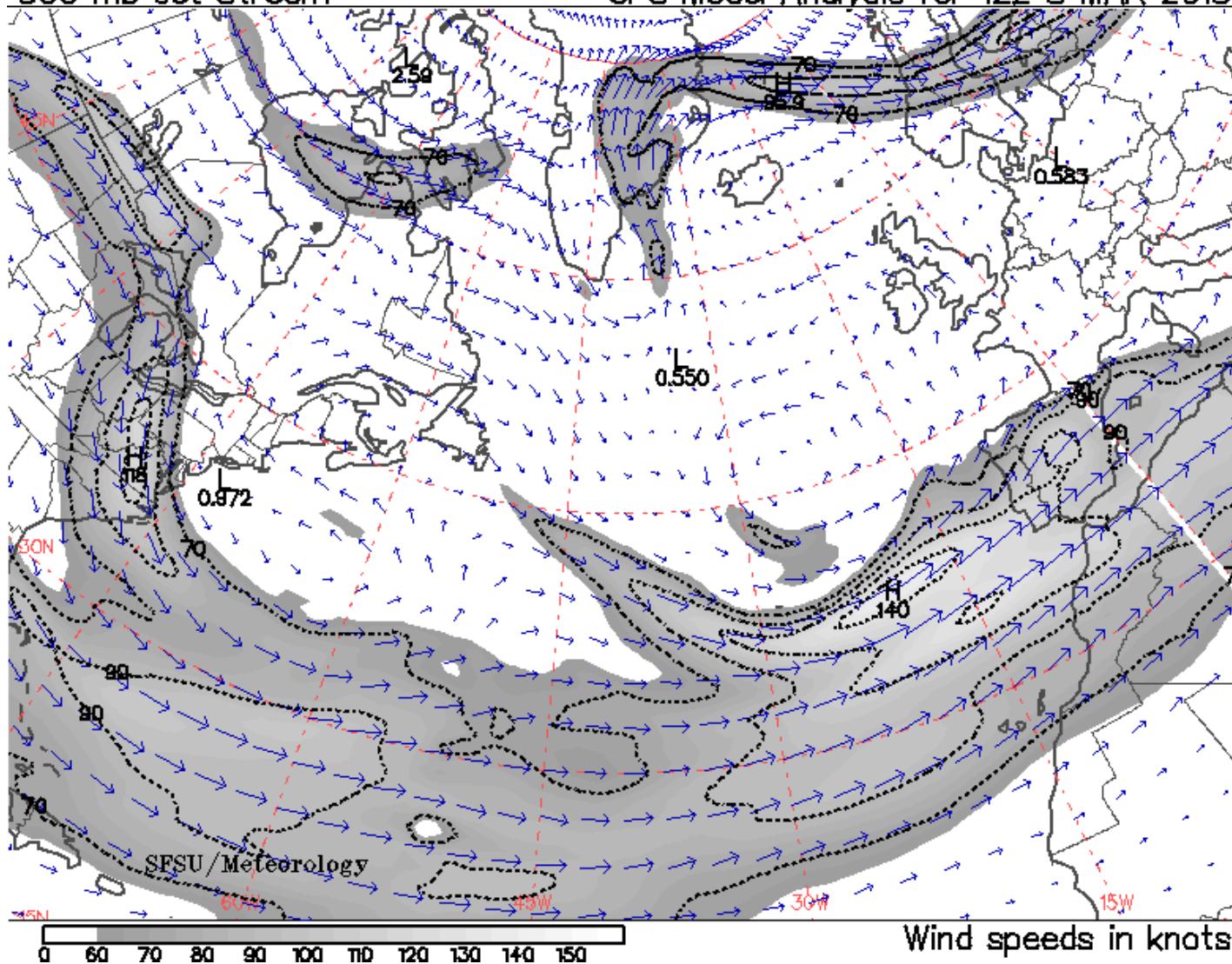
GFS Model Analysis for 12Z 7 MAR 2013





300 mb Jet Stream

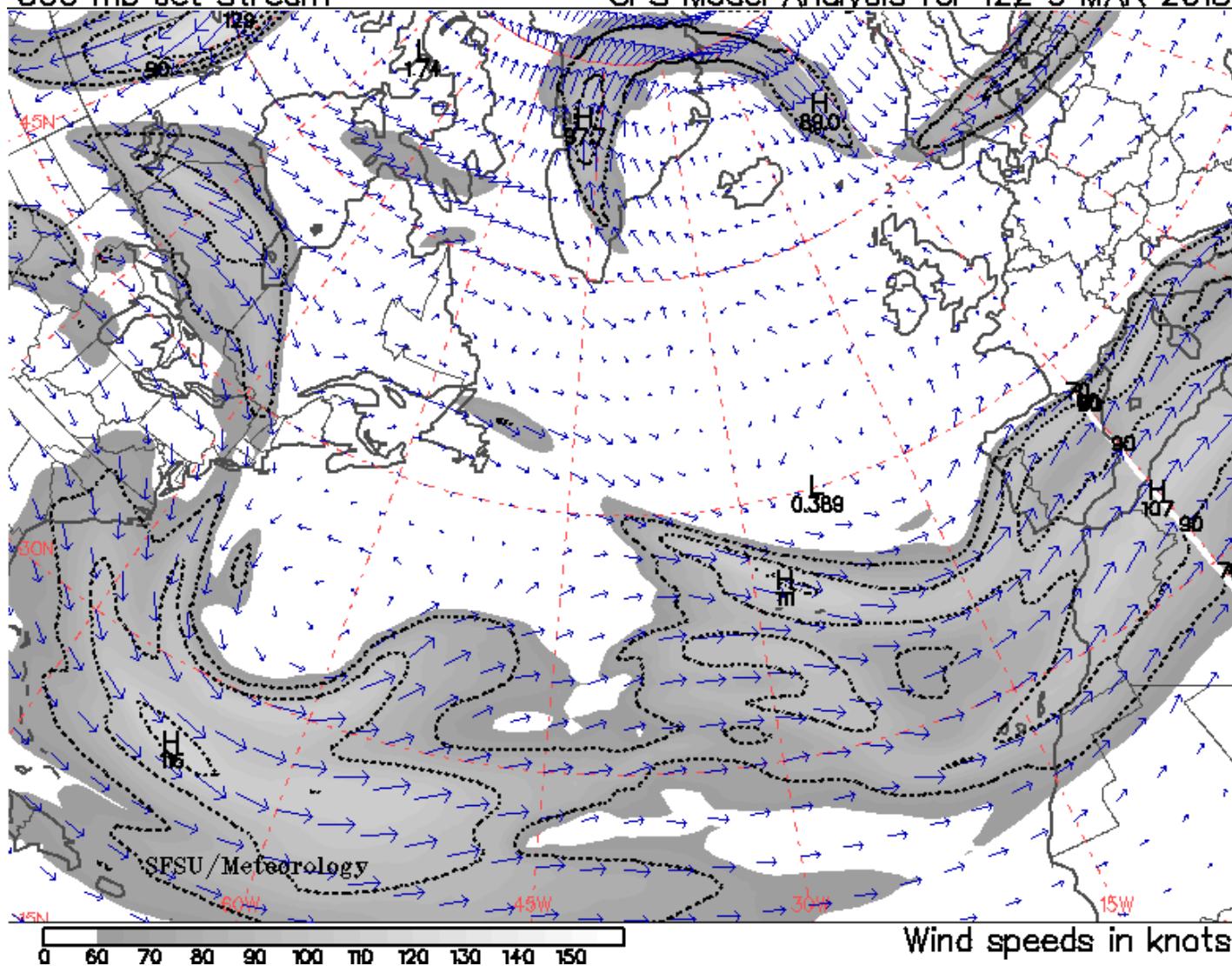
GFS Model Analysis for 12Z 8 MAR 2013





300 mb Jet Stream

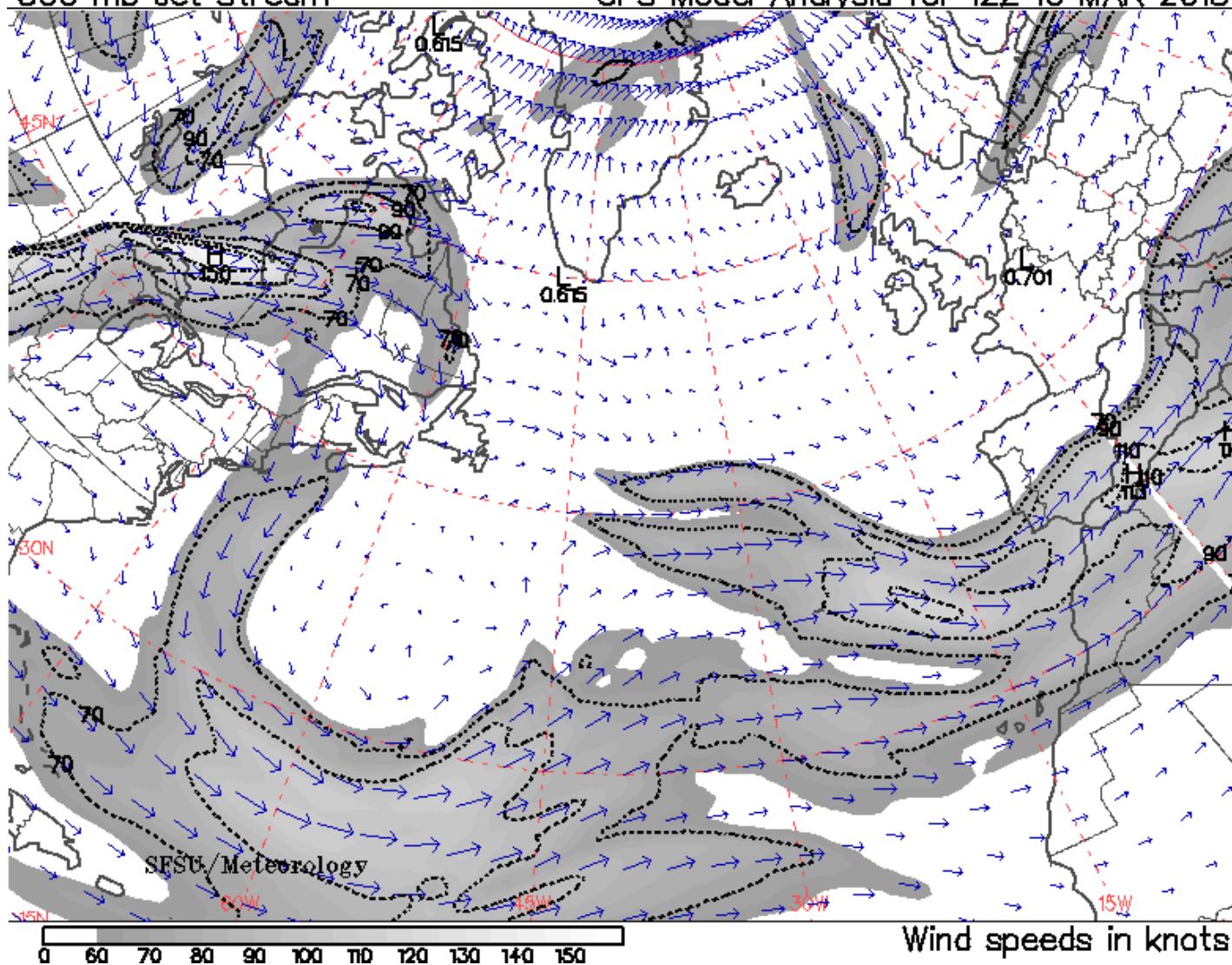
GFS Model Analysis for 12Z 9 MAR 2013





300 mb Jet Stream

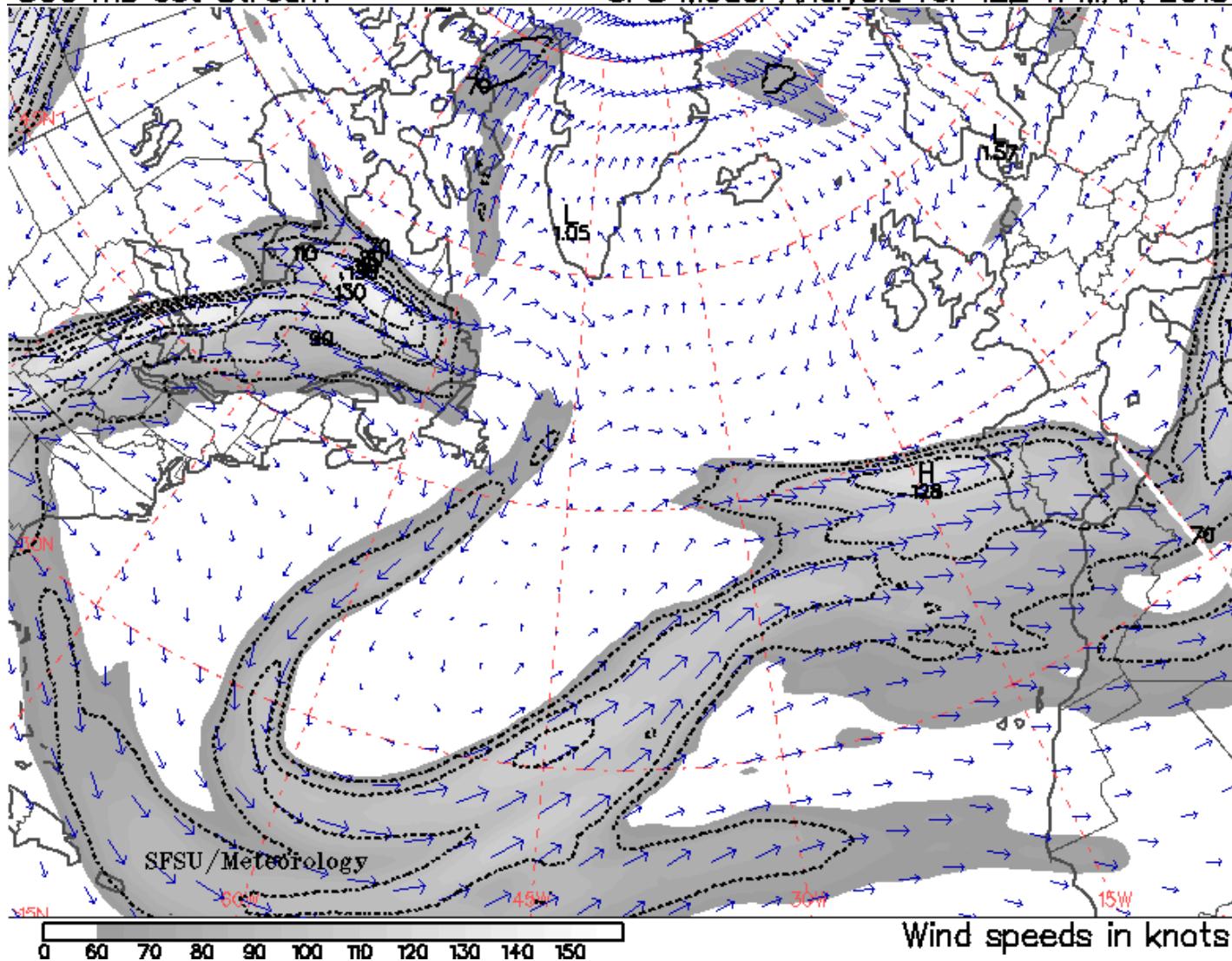
GFS Model Analysis for 12Z 10 MAR 2013





300 mb Jet Stream

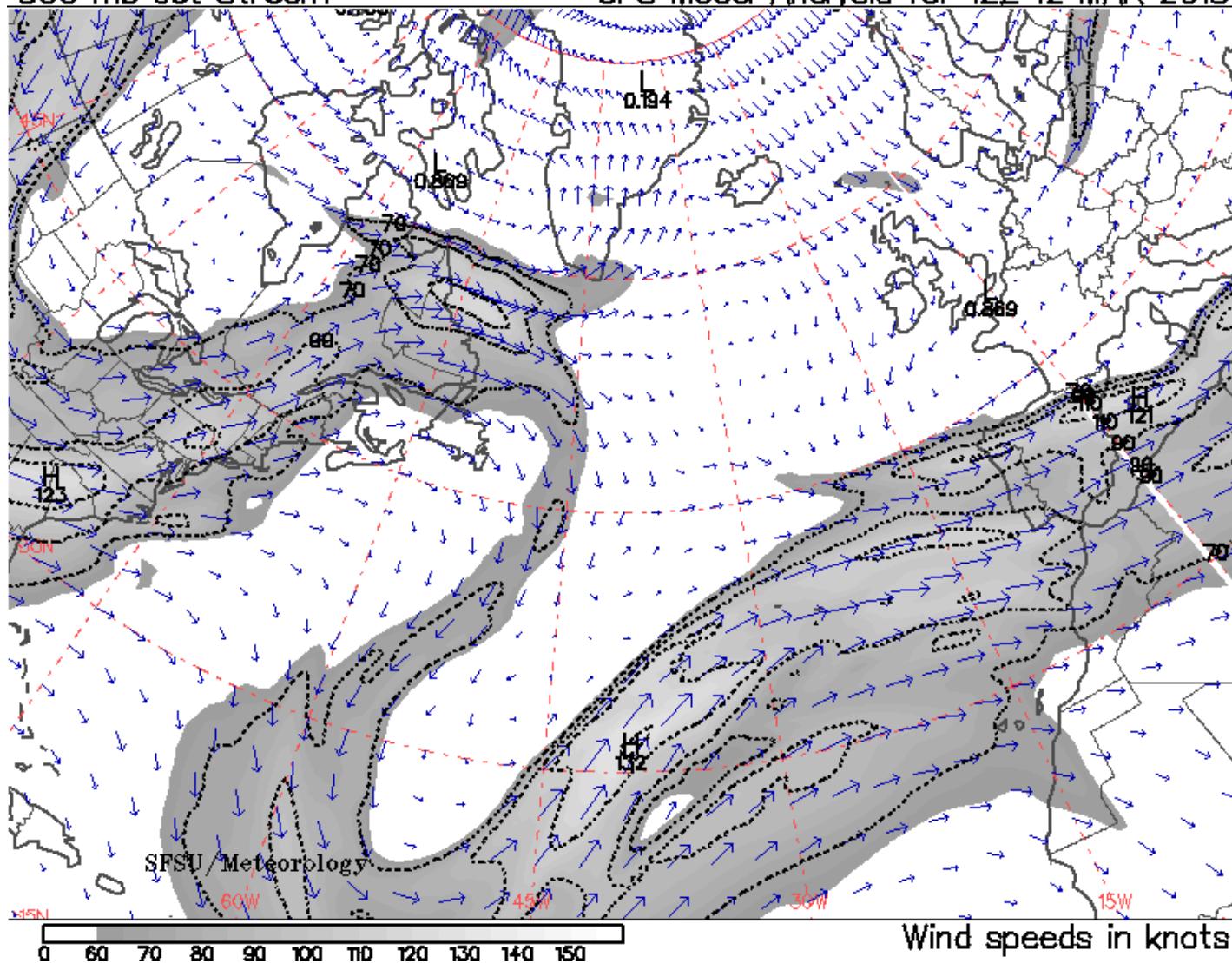
GFS Model Analysis for 12Z 11 MAR 2013





300 mb Jet Stream

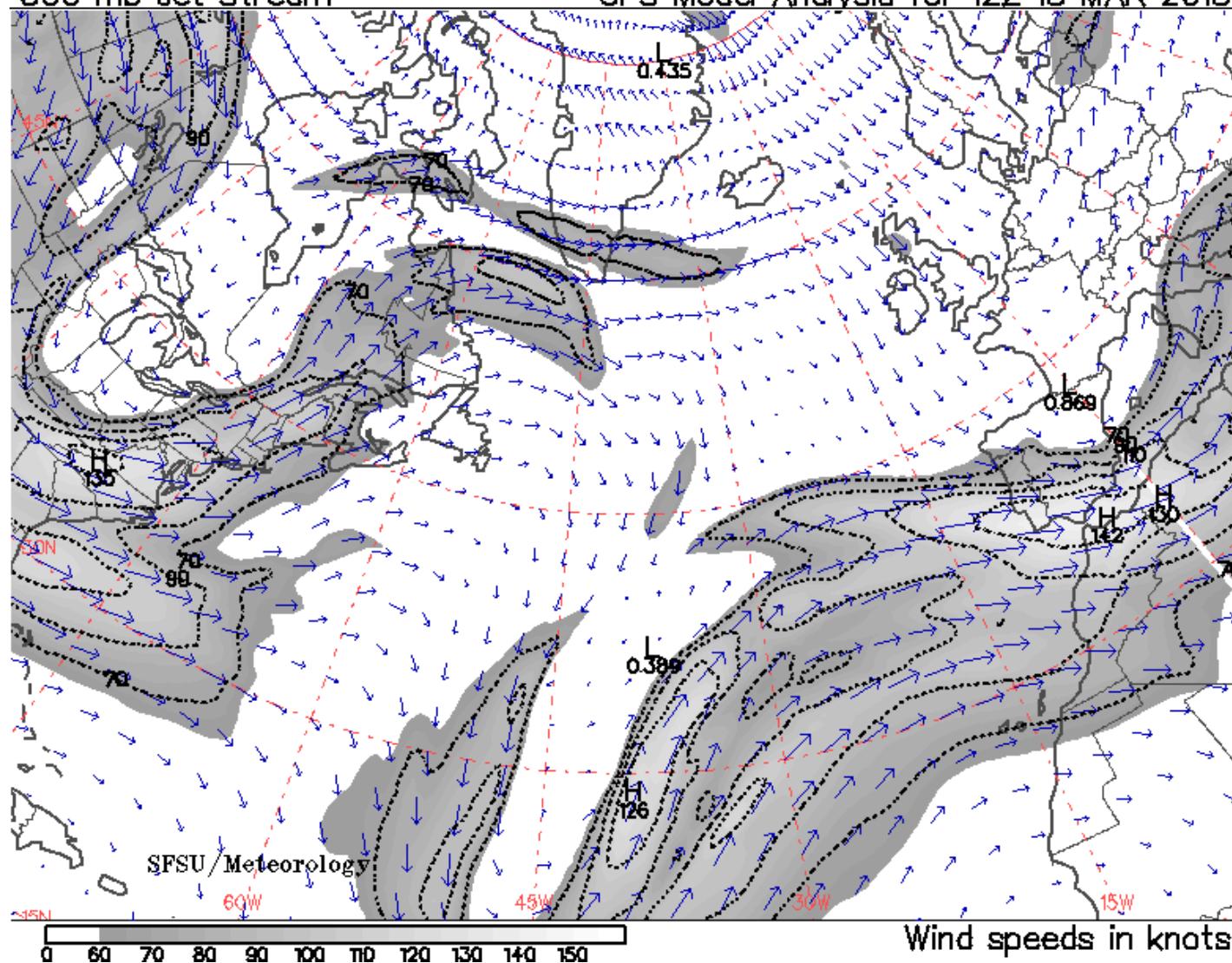
GFS Model Analysis for 12Z 12 MAR 2013





300 mb Jet Stream

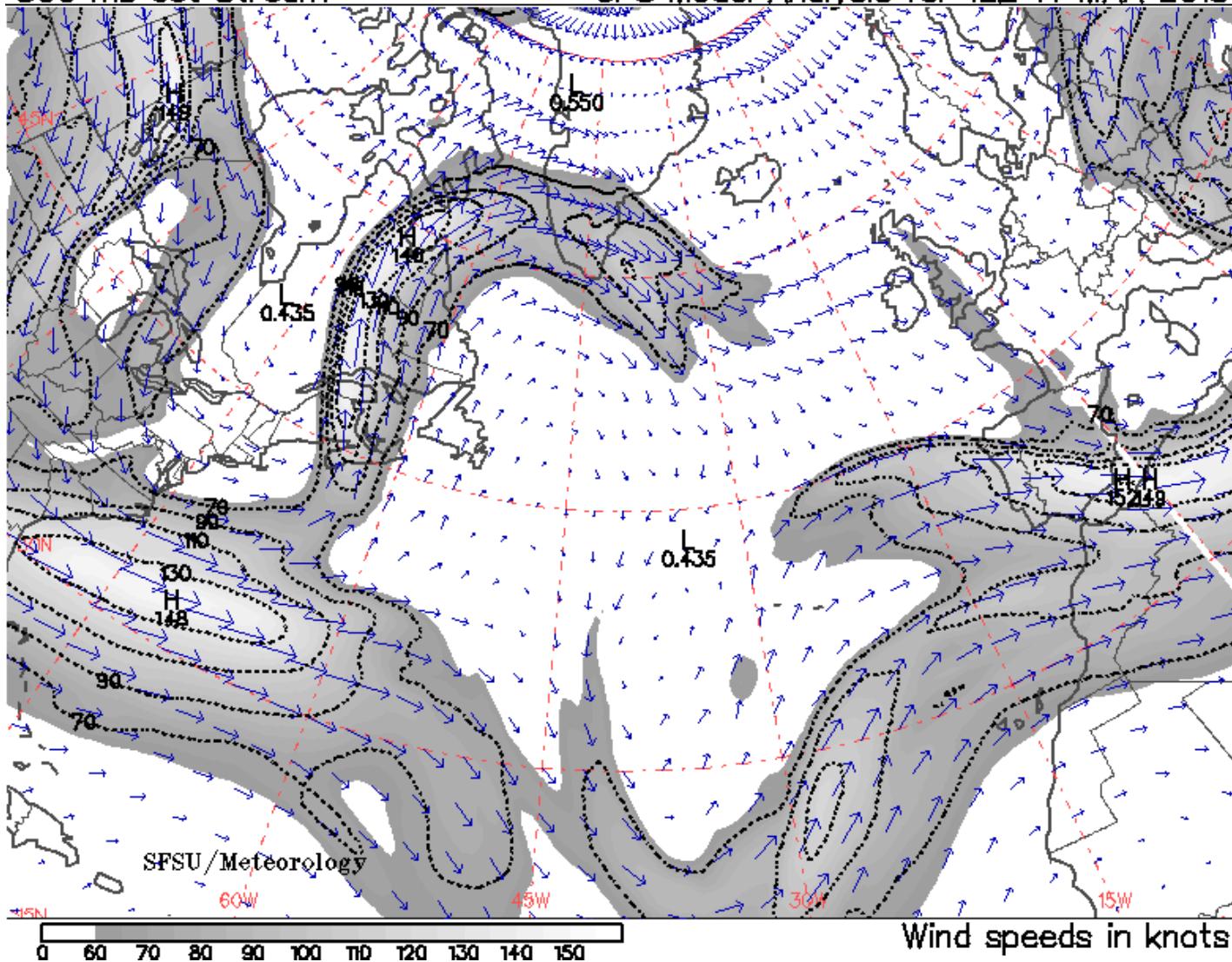
GFS Model Analysis for 12Z 13 MAR 2013





300 mb Jet Stream

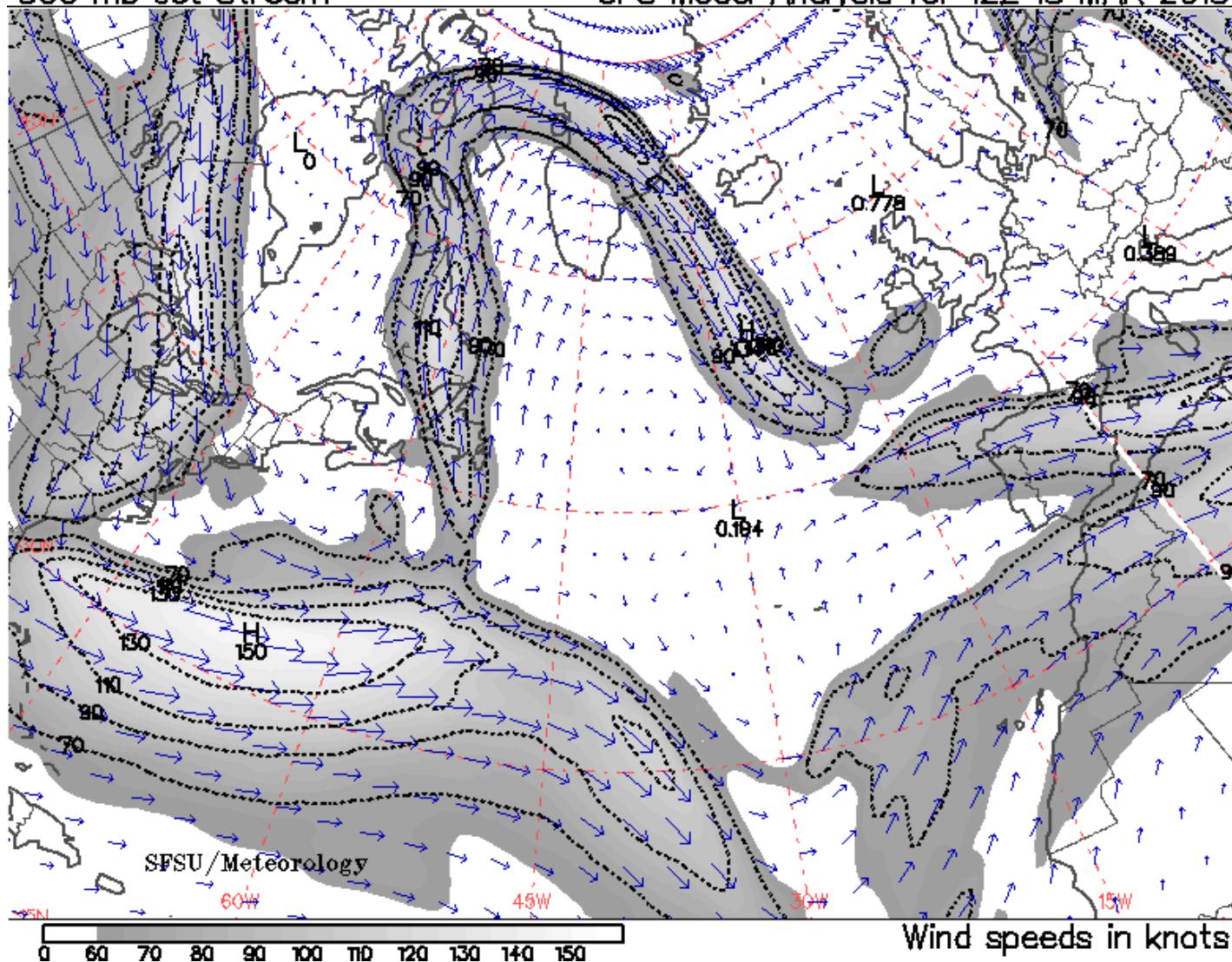
GFS Model Analysis for 12Z 14 MAR 2013





300 mb Jet Stream

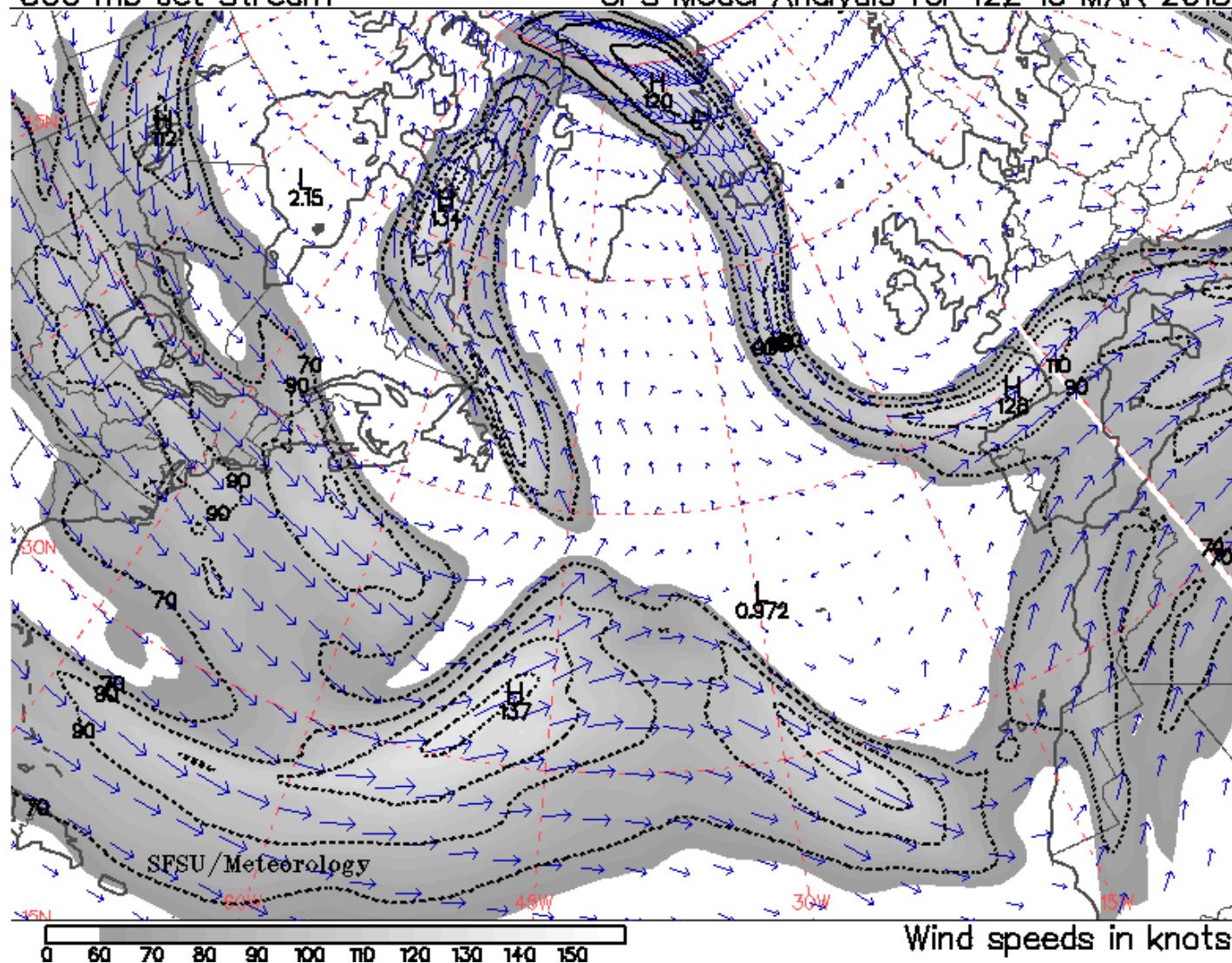
GFS Model Analysis for 12Z 15 MAR 2013





300 mb Jet Stream

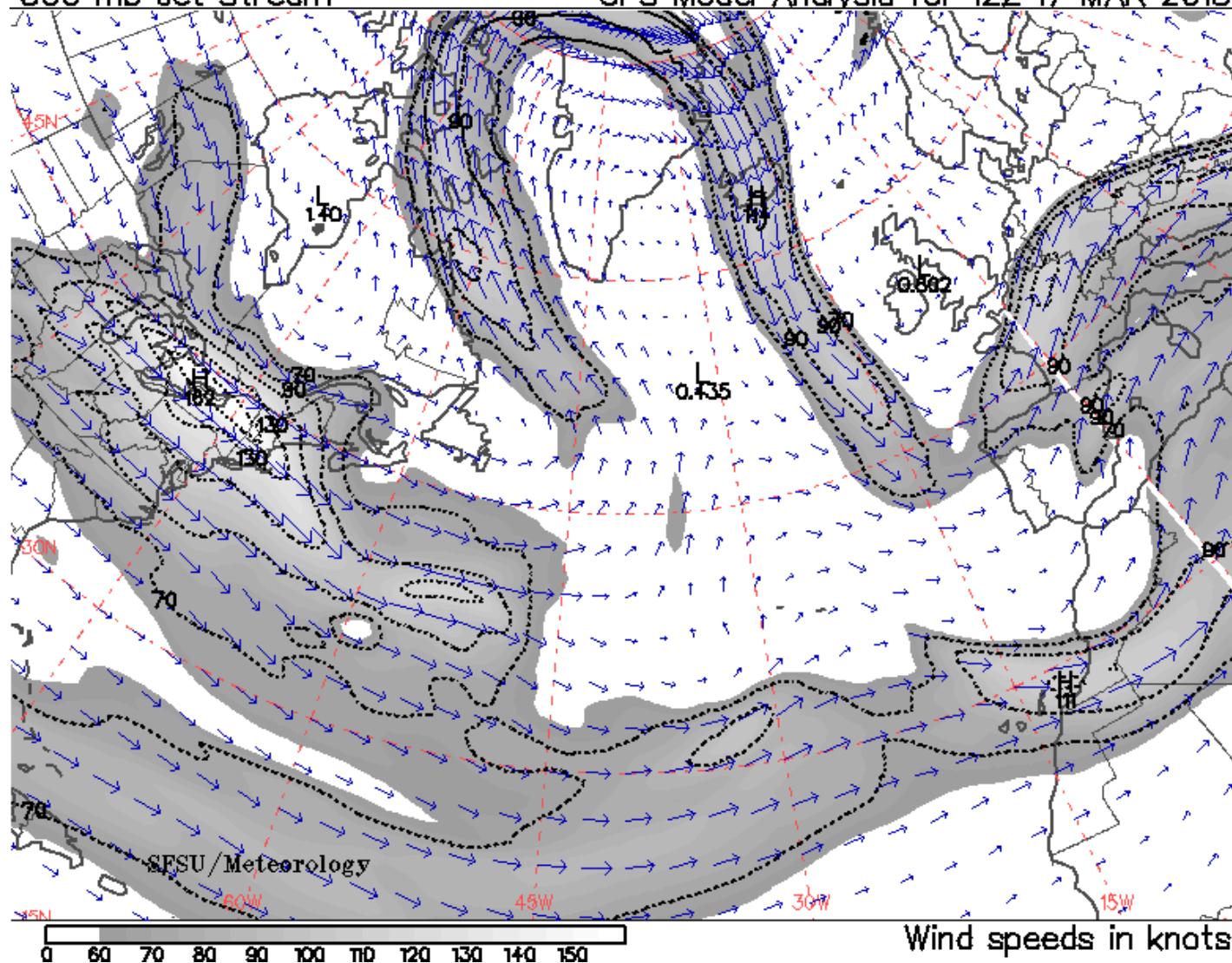
GFS Model Analysis for 12Z 16 MAR 2013





300 mb Jet Stream

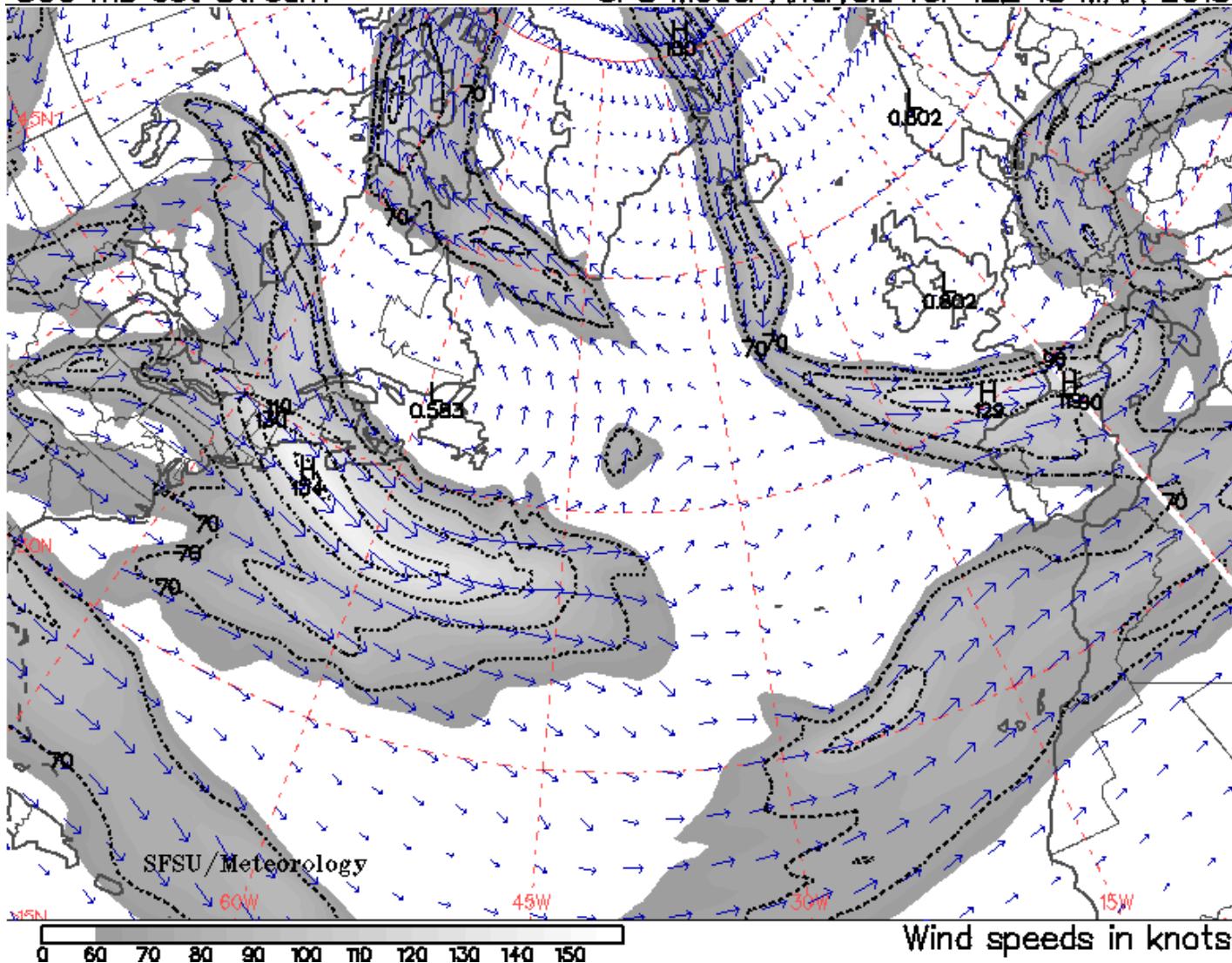
GFS Model Analysis for 12Z 17 MAR 2013





300 mb Jet Stream

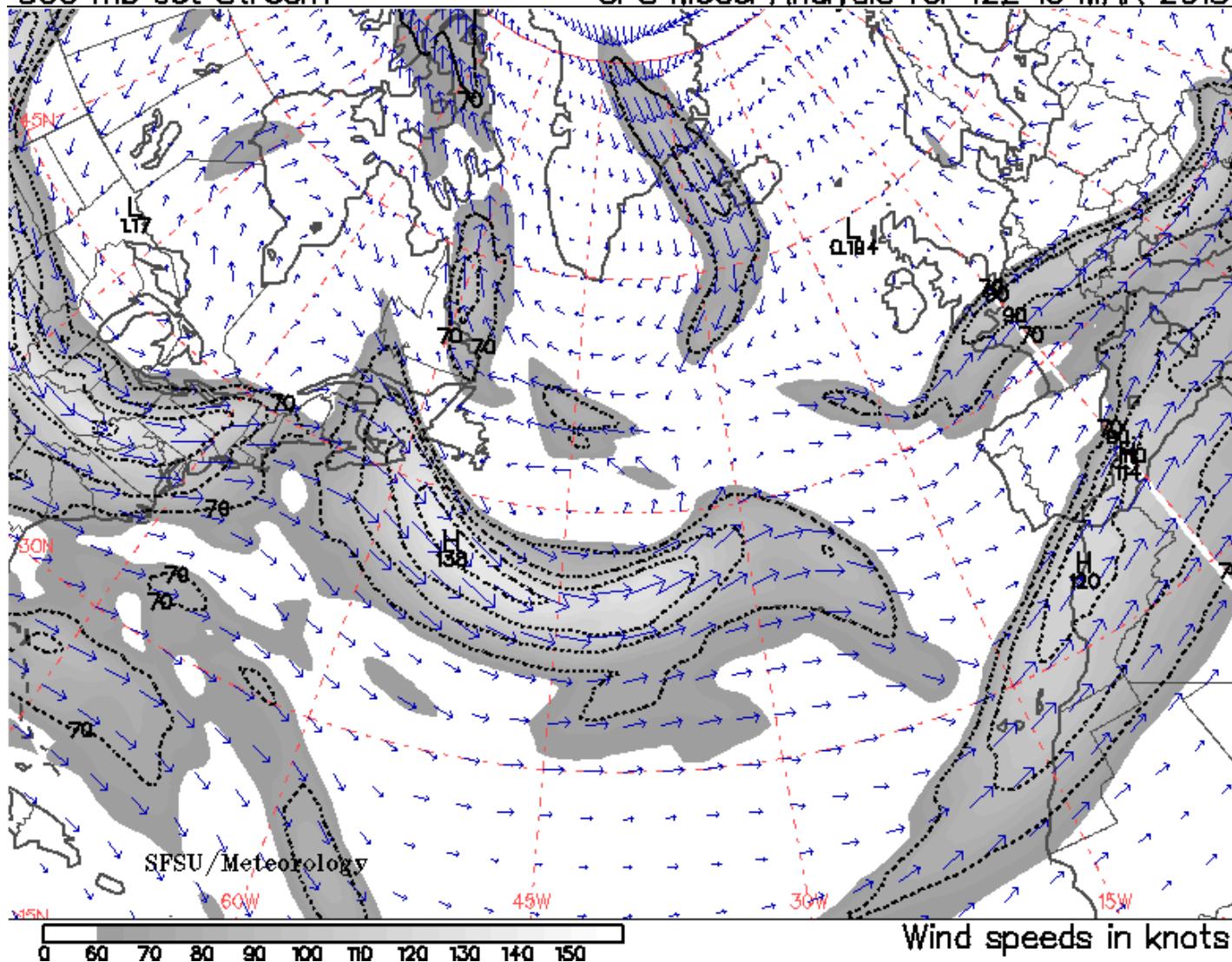
GFS Model Analysis for 12Z 18 MAR 2013





300 mb Jet Stream

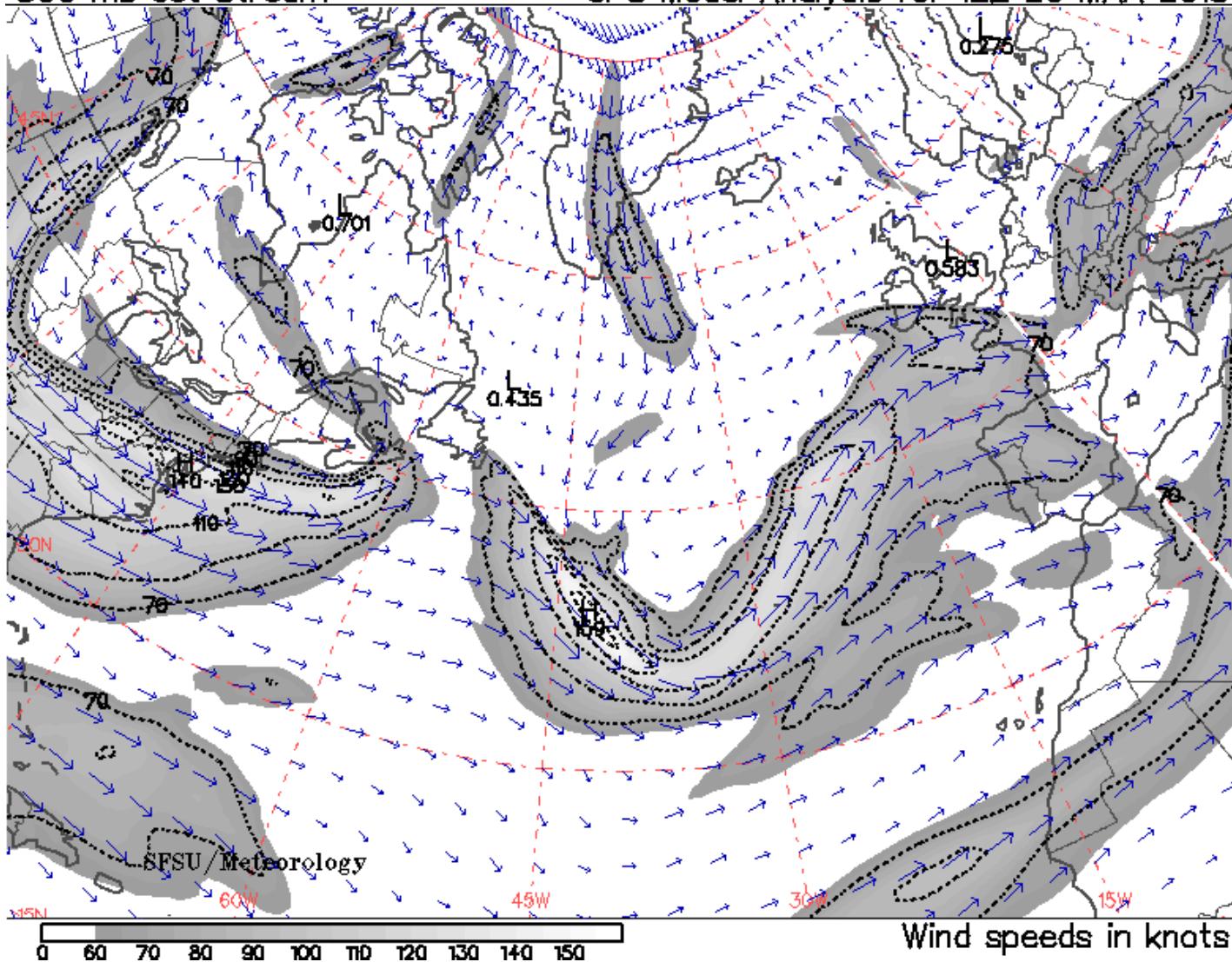
GFS Model Analysis for 12Z 19 MAR 2013





300 mb Jet Stream

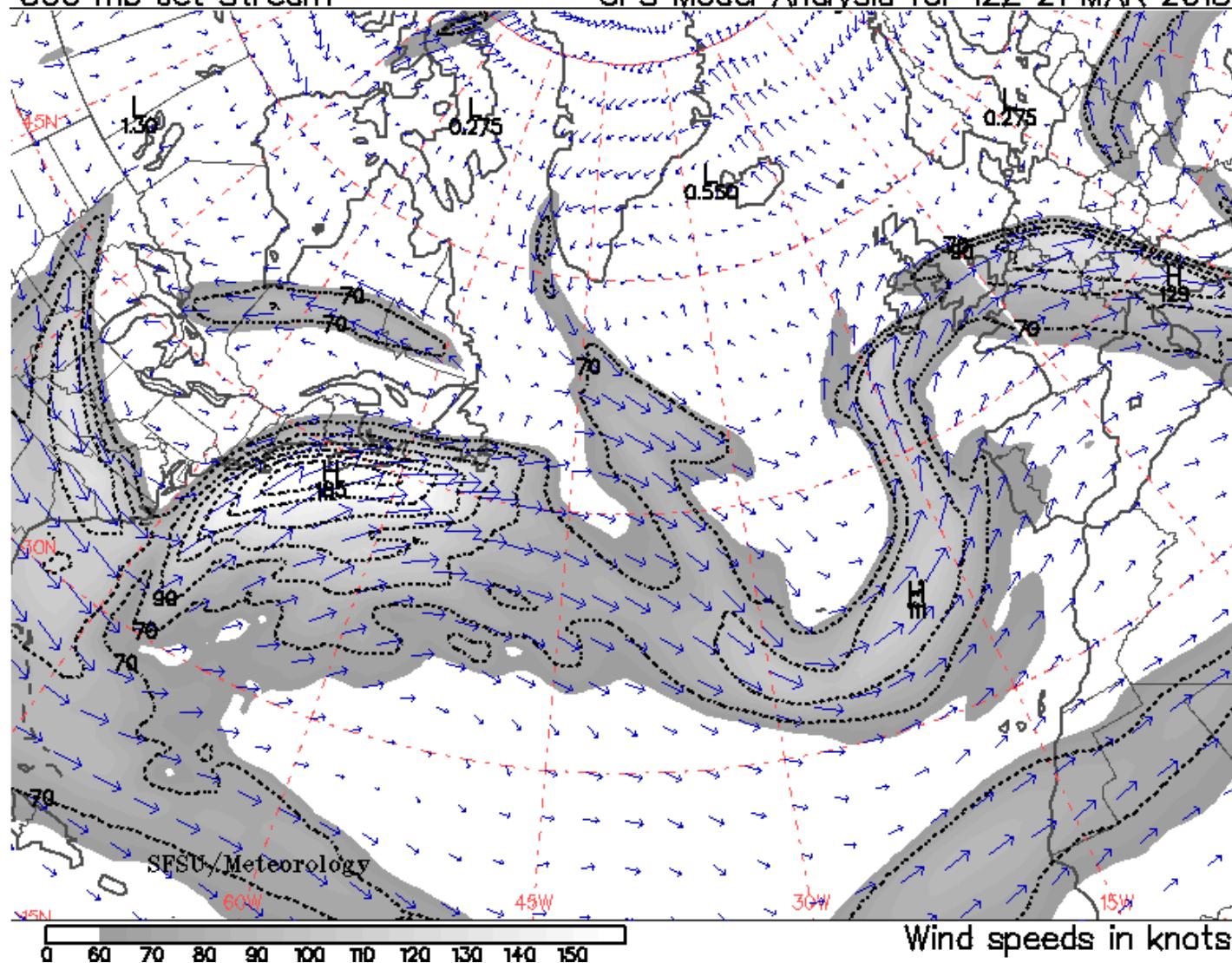
GFS Model Analysis for 12Z 20 MAR 2013





300 mb Jet Stream

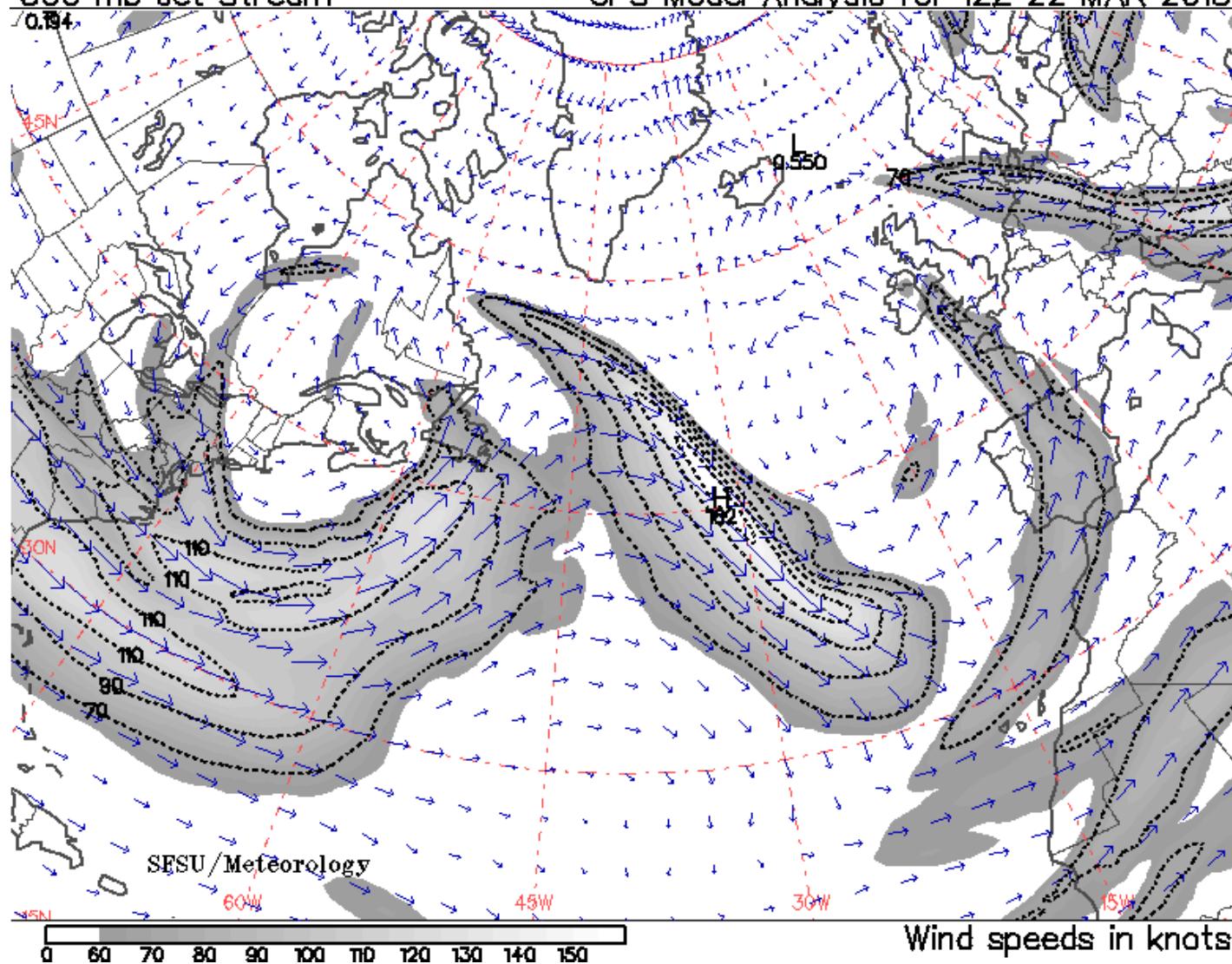
GFS Model Analysis for 12Z 21 MAR 2013





300 mb Jet Stream

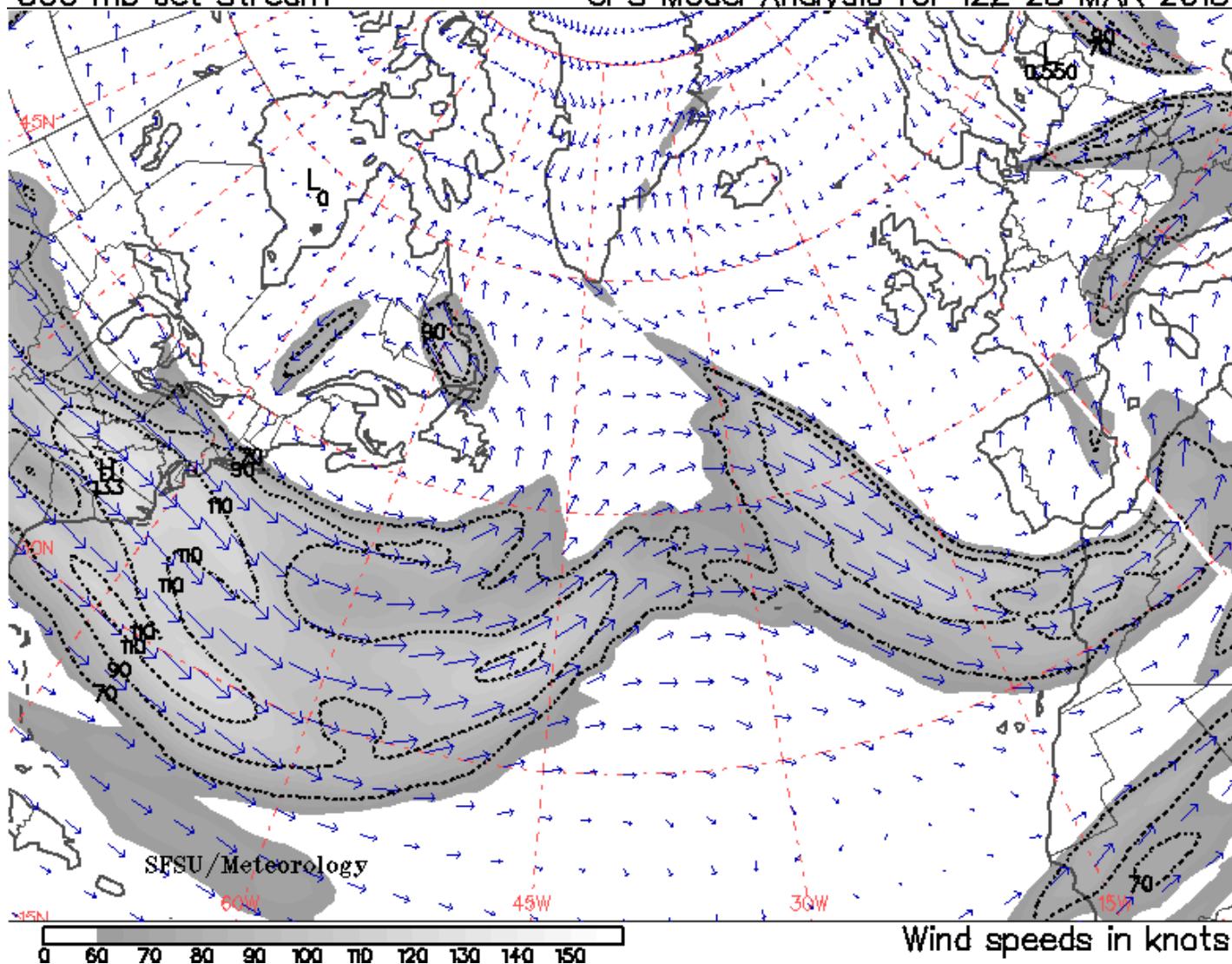
GFS Model Analysis for 12Z 22 MAR 2013





300 mb Jet Stream

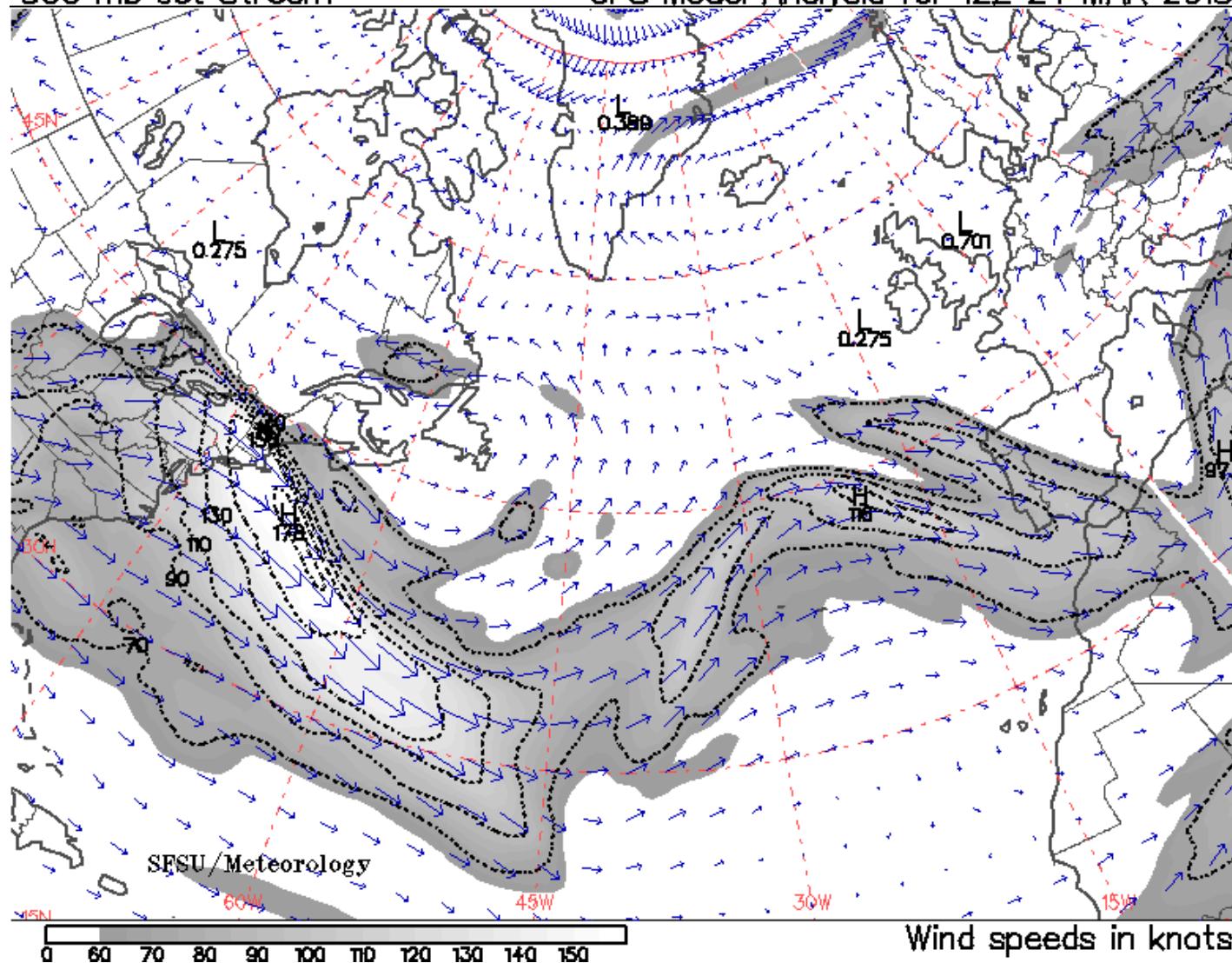
GFS Model Analysis for 12Z 23 MAR 2013





300 mb Jet Stream

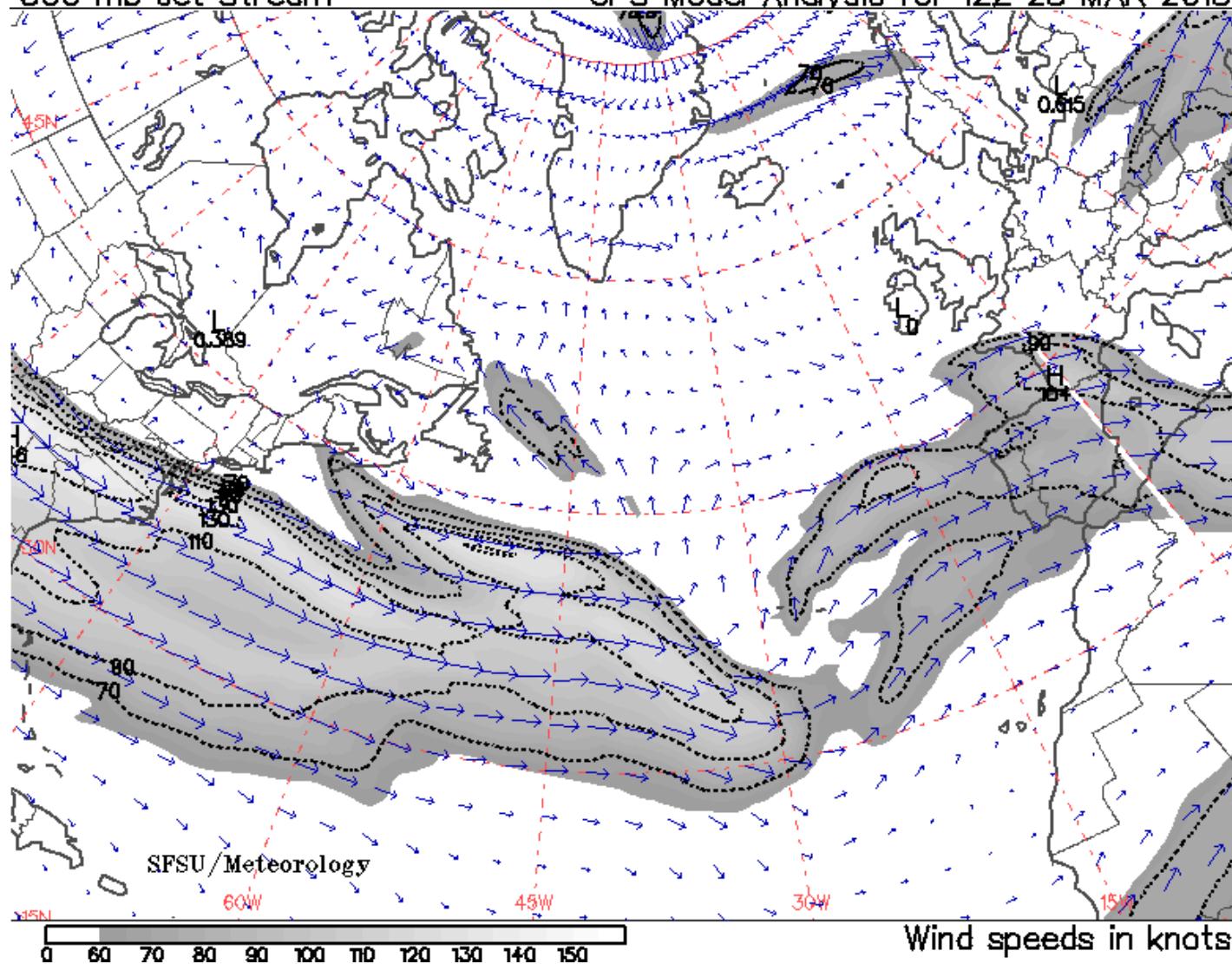
GFS Model Analysis for 12Z 24 MAR 2013





300 mb Jet Stream

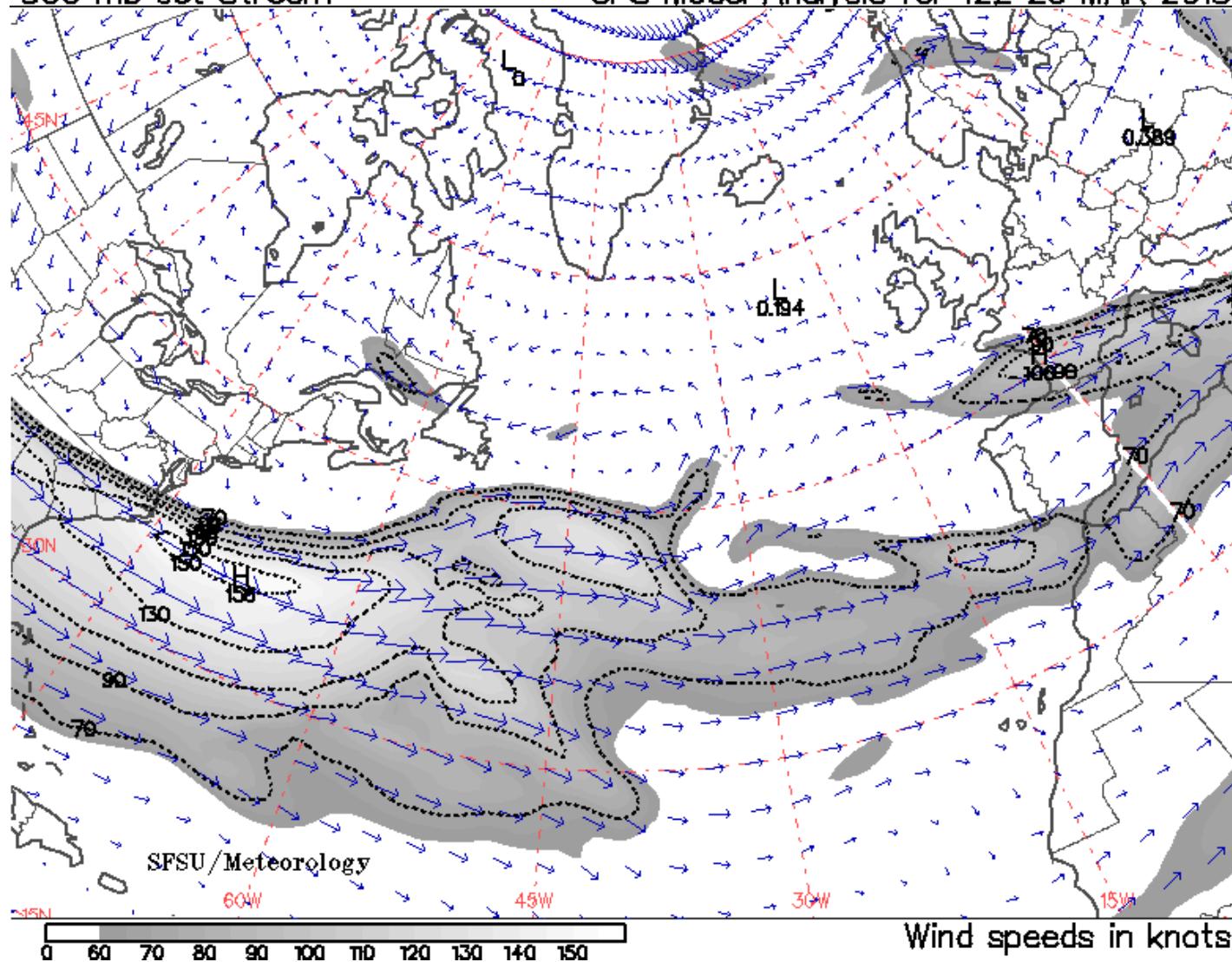
GFS Model Analysis for 12Z 25 MAR 2013





300 mb Jet Stream

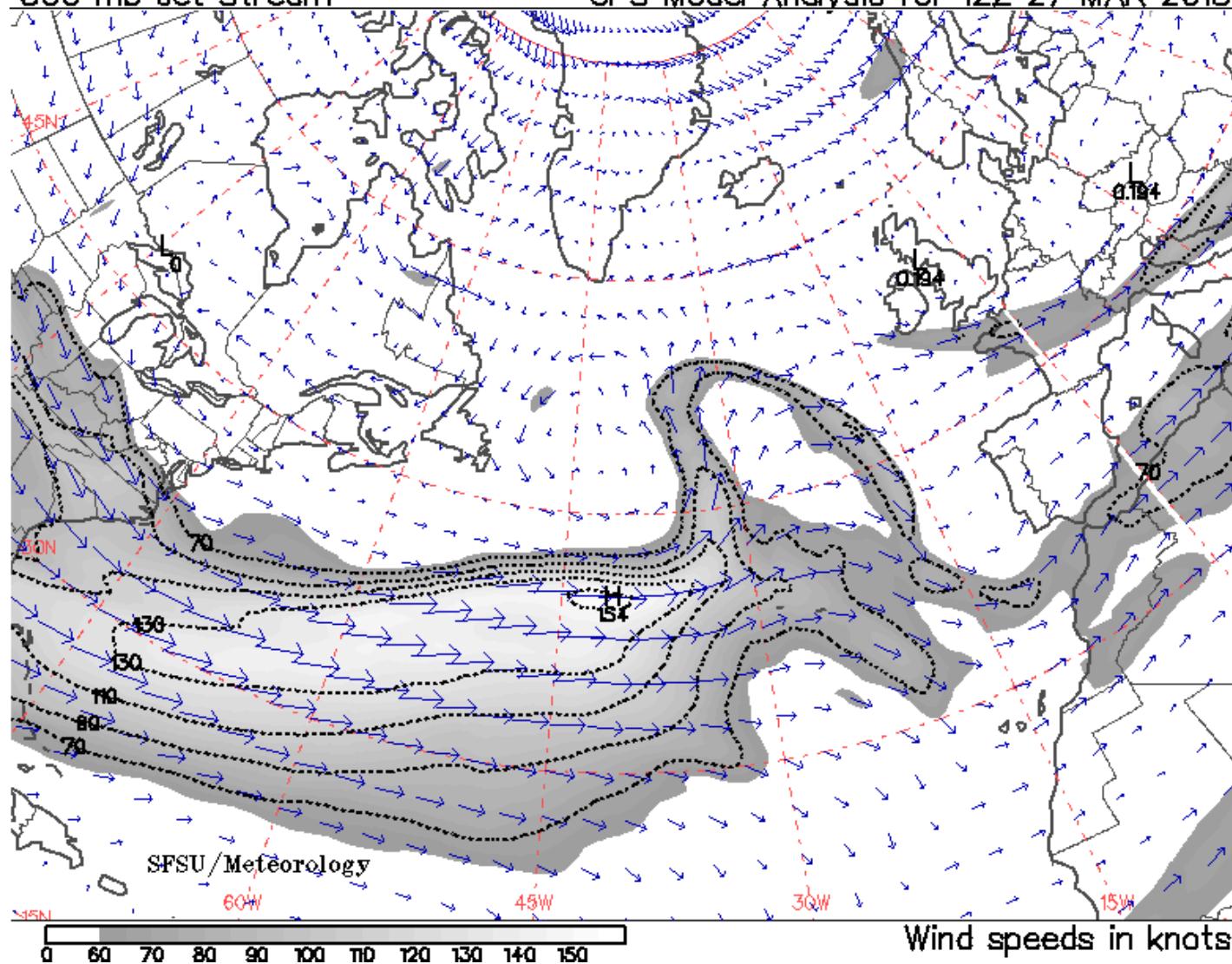
GFS Model Analysis for 12Z 26 MAR 2013





300 mb Jet Stream

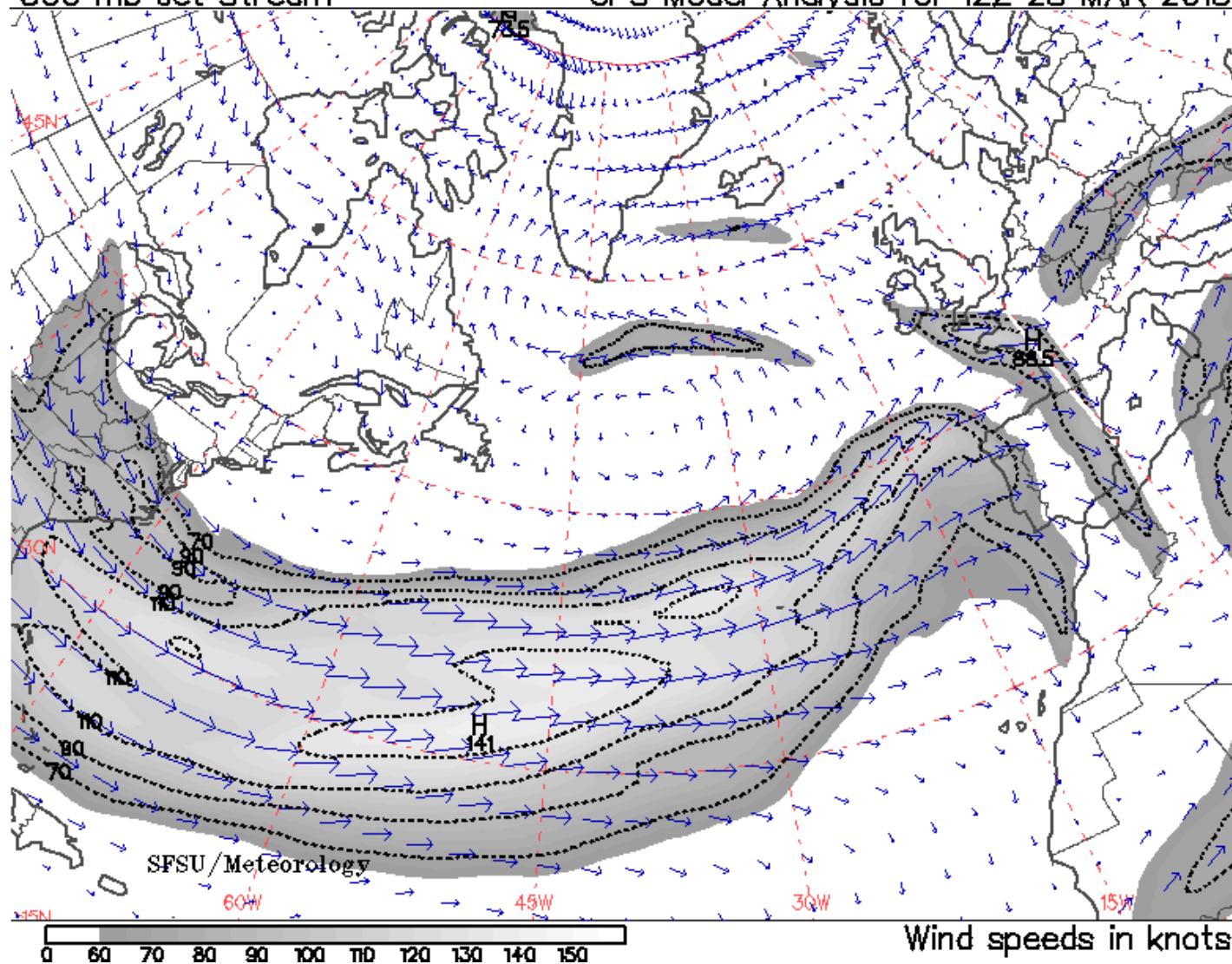
GFS Model Analysis for 12Z 27 MAR 2013





300 mb Jet Stream

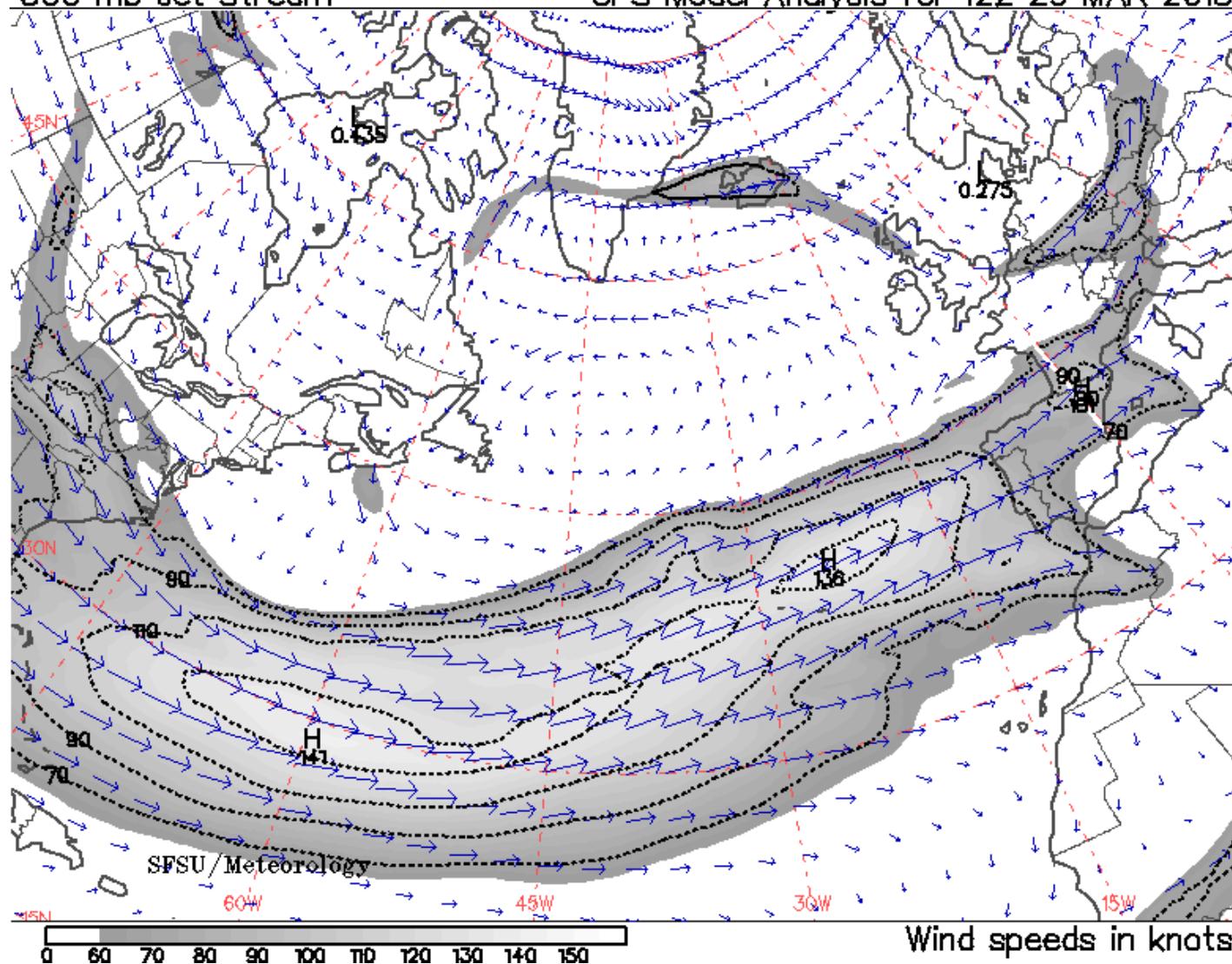
GFS Model Analysis for 12Z 28 MAR 2013





300 mb Jet Stream

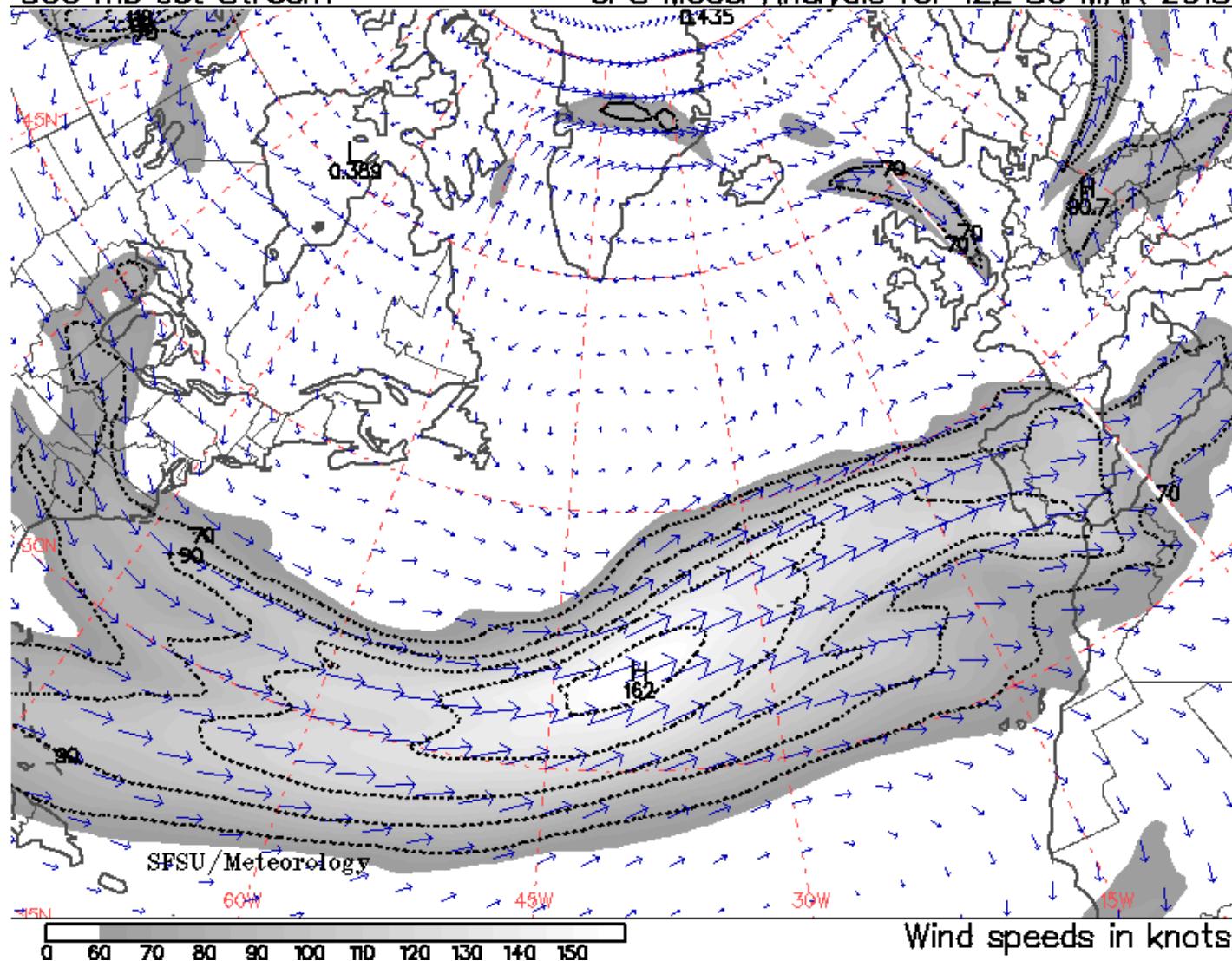
GFS Model Analysis for 12Z 29 MAR 2013





300 mb Jet Stream

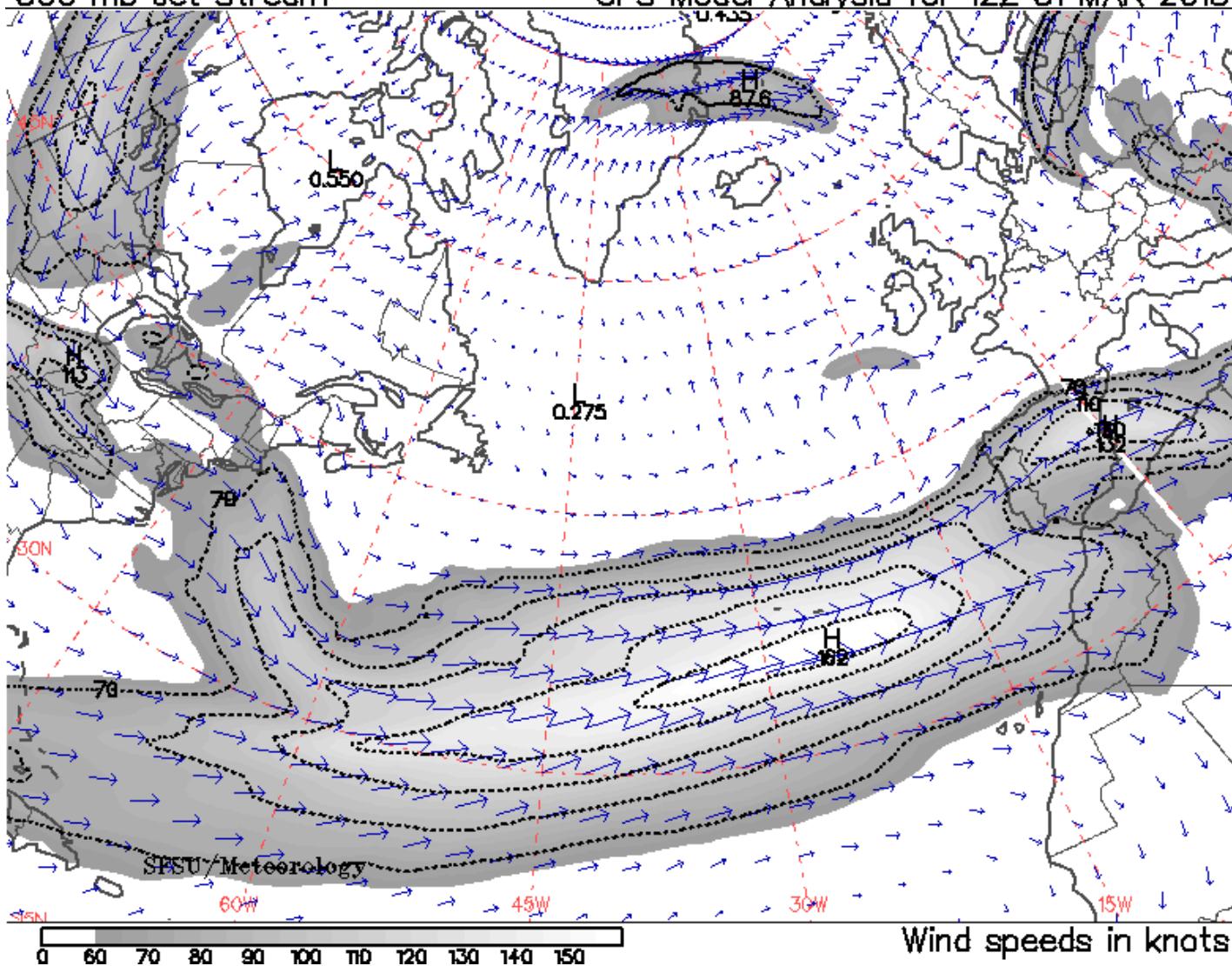
GFS Model Analysis for 12Z 30 MAR 2013





300 mb Jet Stream

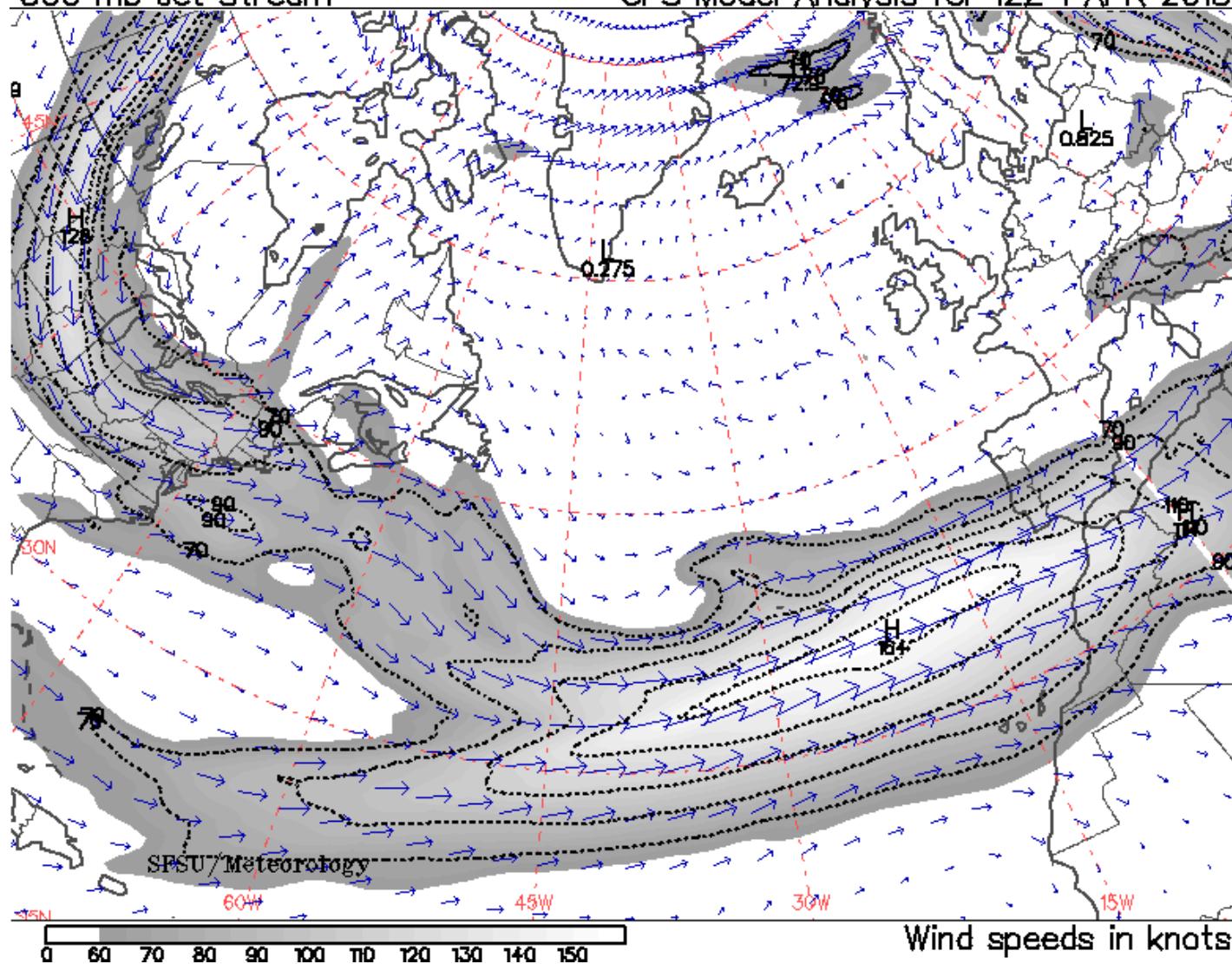
GFS Model Analysis for 12Z 31 MAR 2013





300 mb Jet Stream

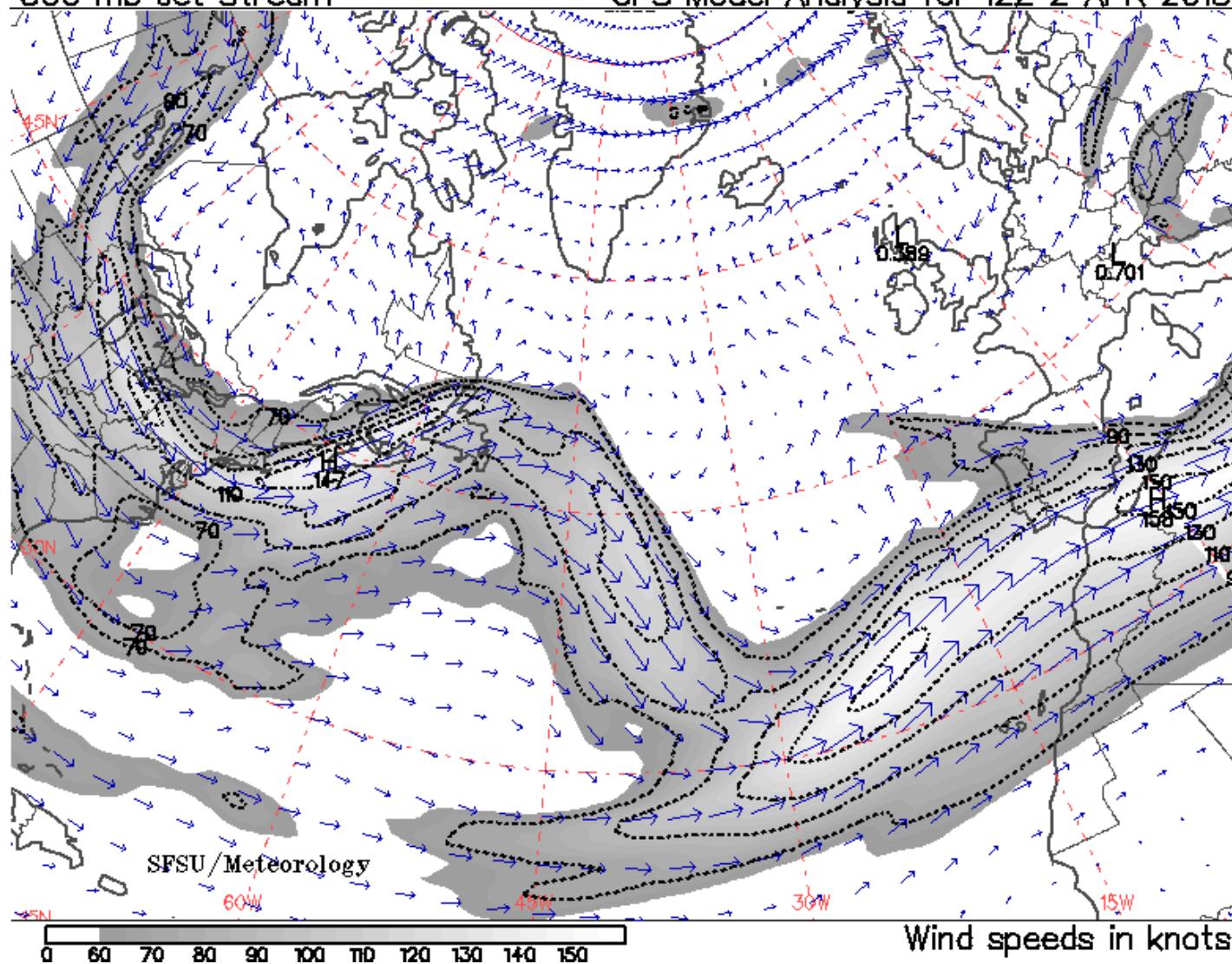
GFS Model Analysis for 12Z 1 APR 2013





300 mb Jet Stream

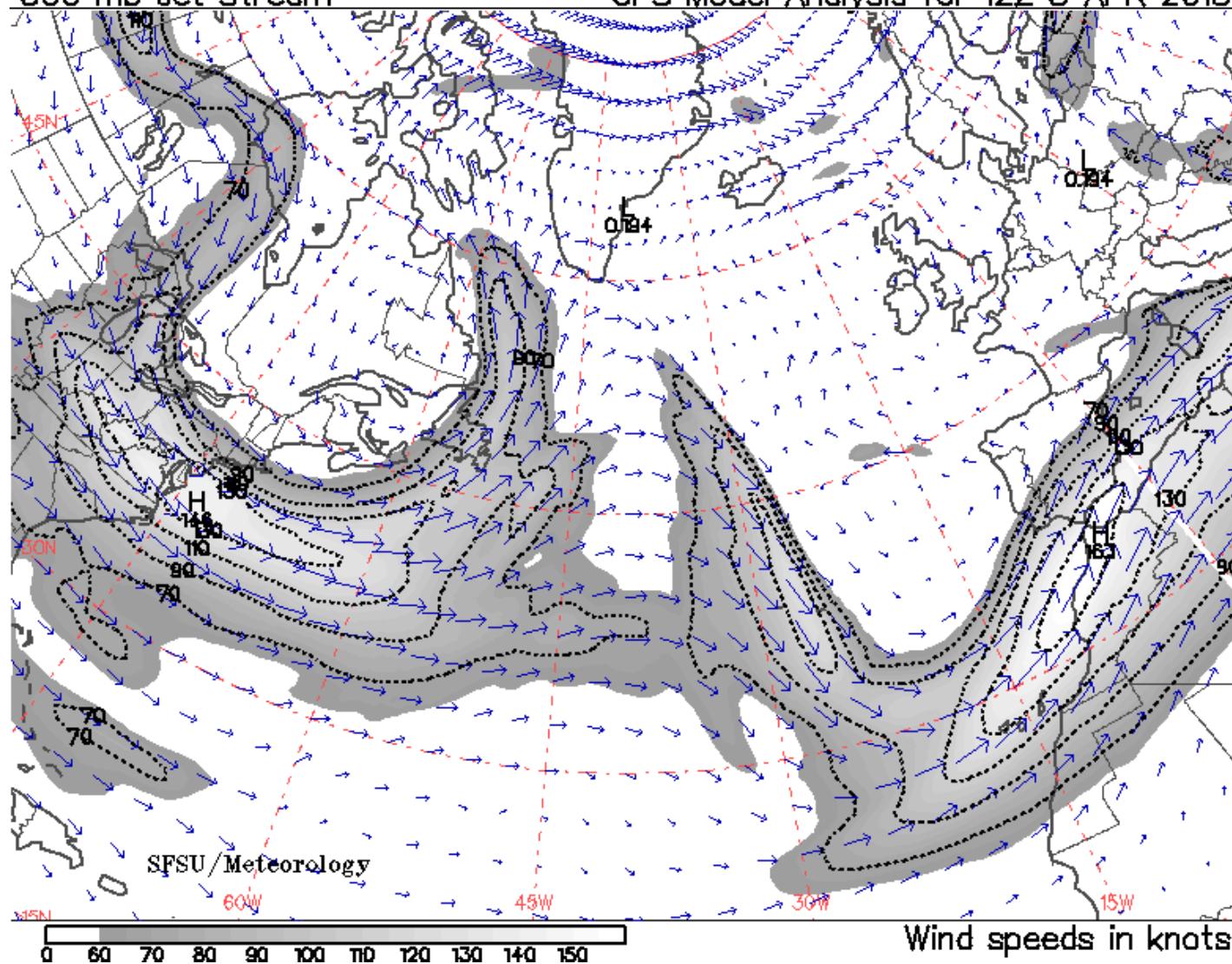
GFS Model Analysis for 12Z 2 APR 2013





300 mb Jet Stream

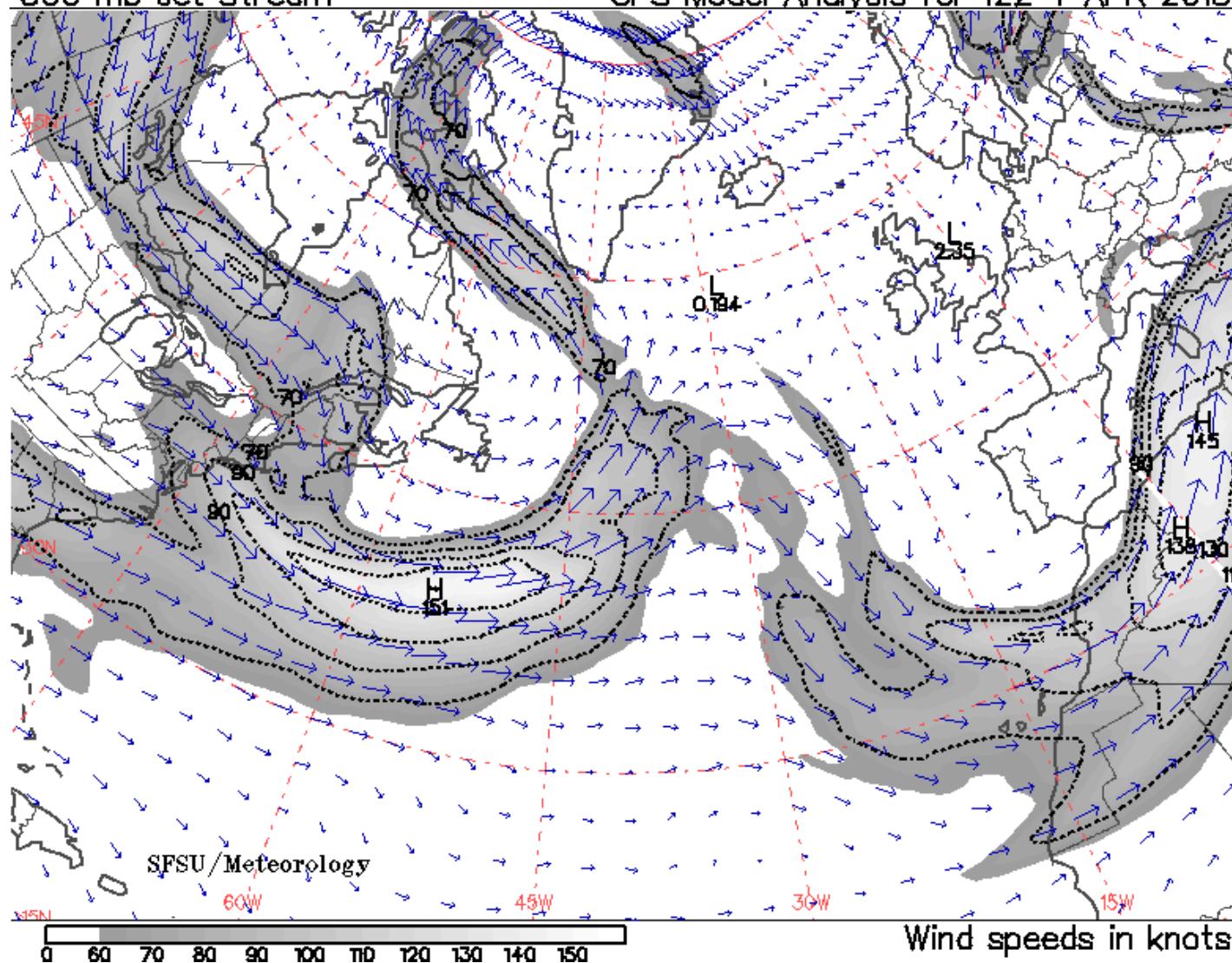
GFS Model Analysis for 12Z 3 APR 2013





300 mb Jet Stream

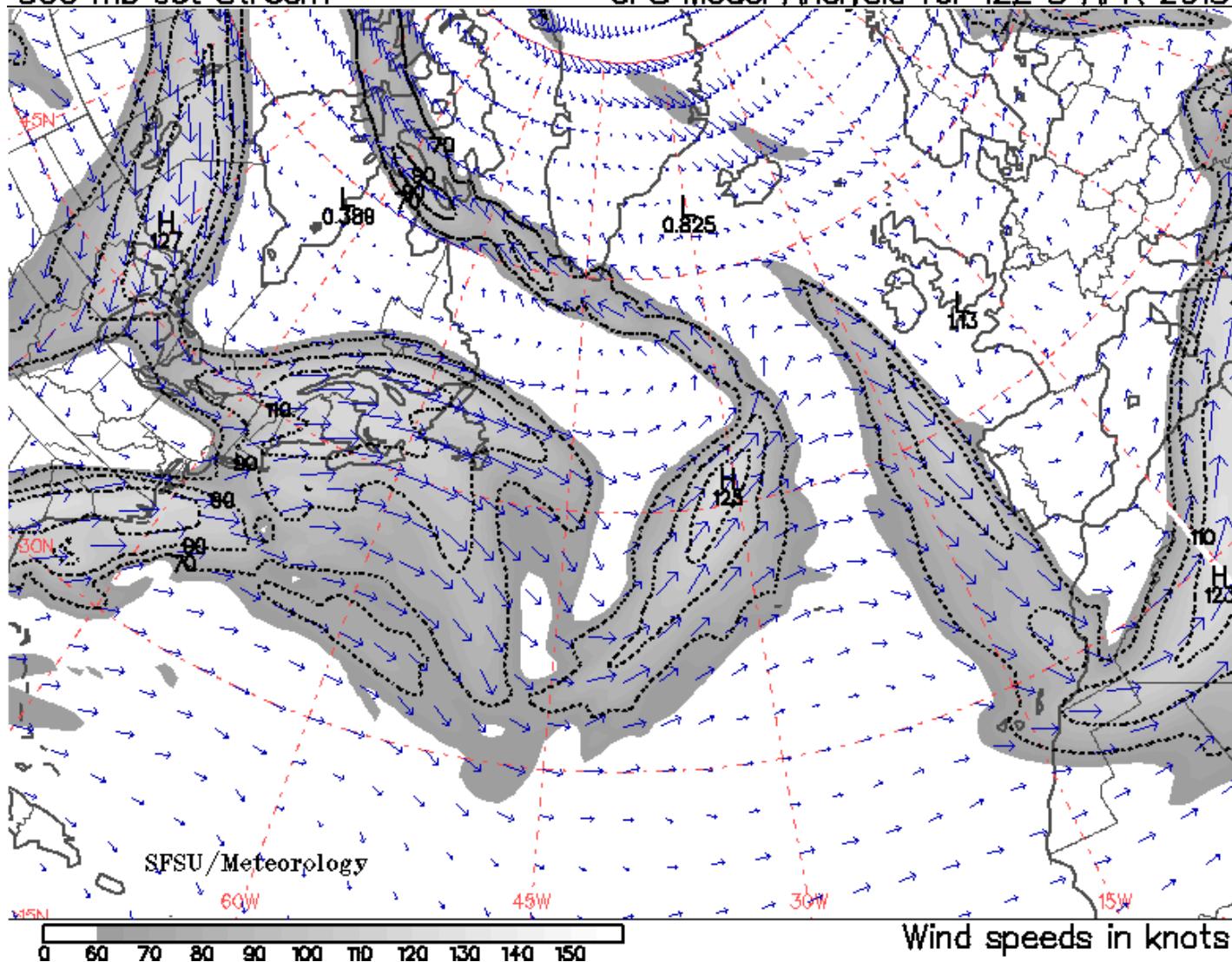
GFS Model Analysis for 12Z 4 APR 2013





300 mb Jet Stream

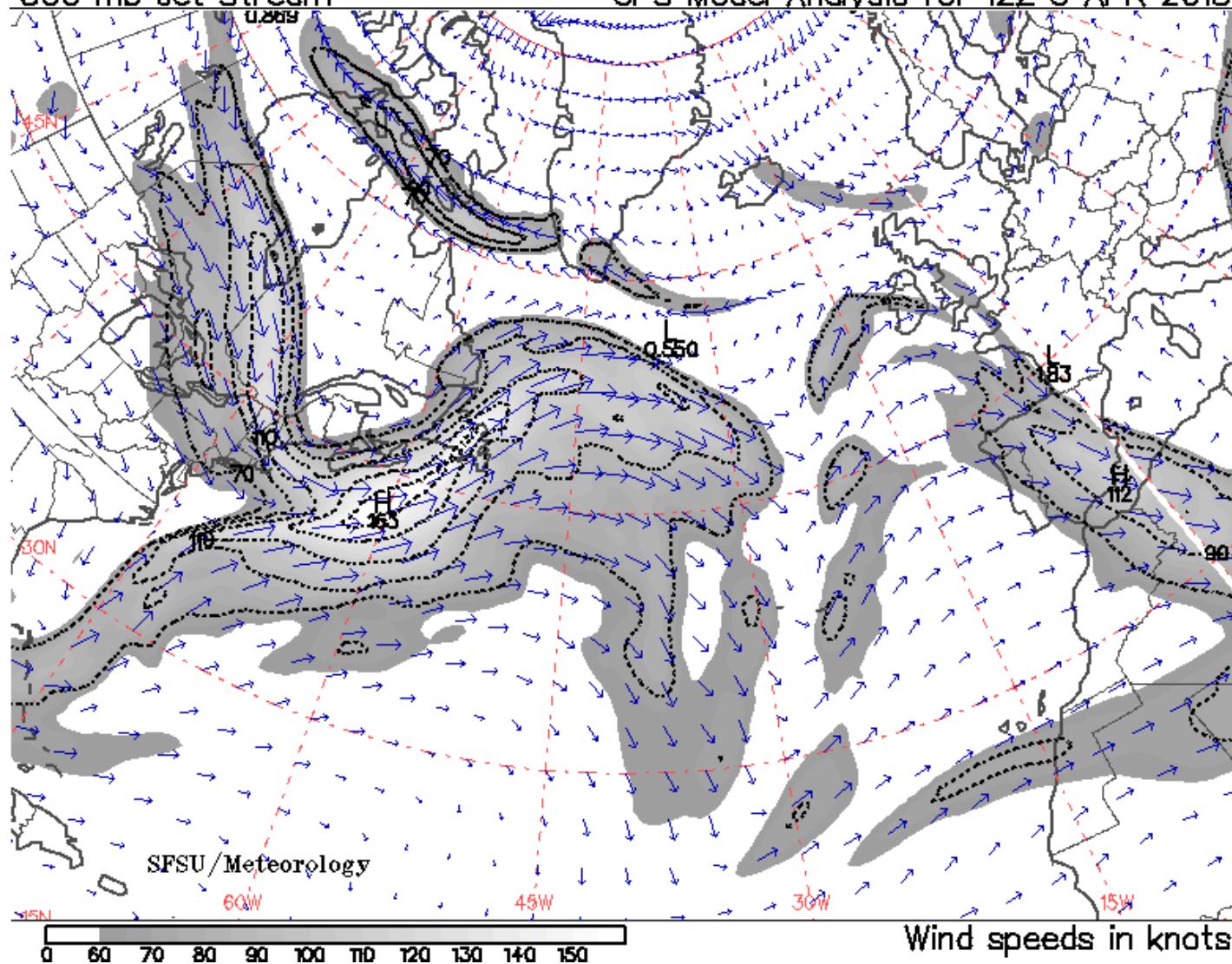
GFS Model Analysis for 12Z 5 APR 2013





300 mb Jet Stream

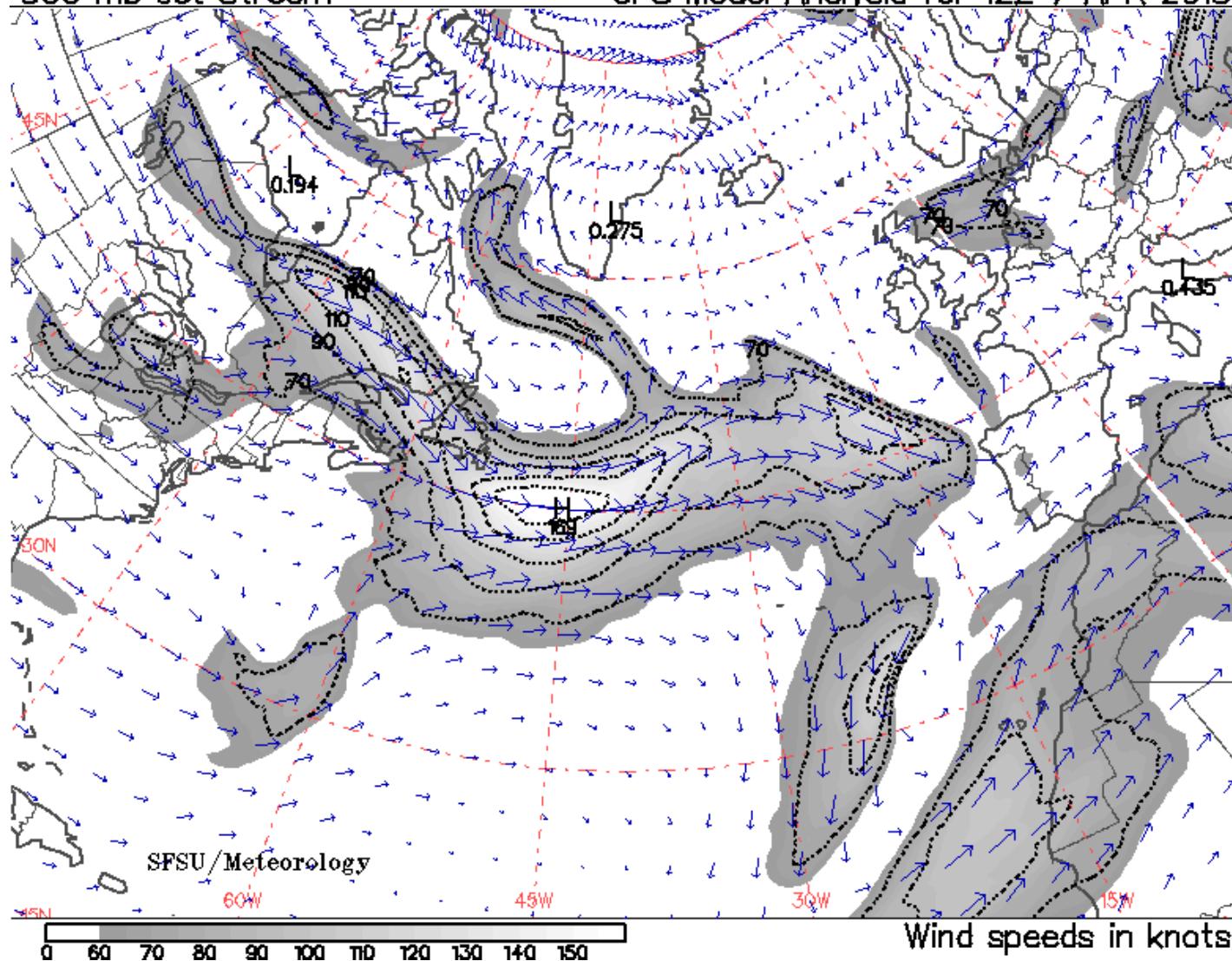
GFS Model Analysis for 12Z 6 APR 2013





300 mb Jet Stream

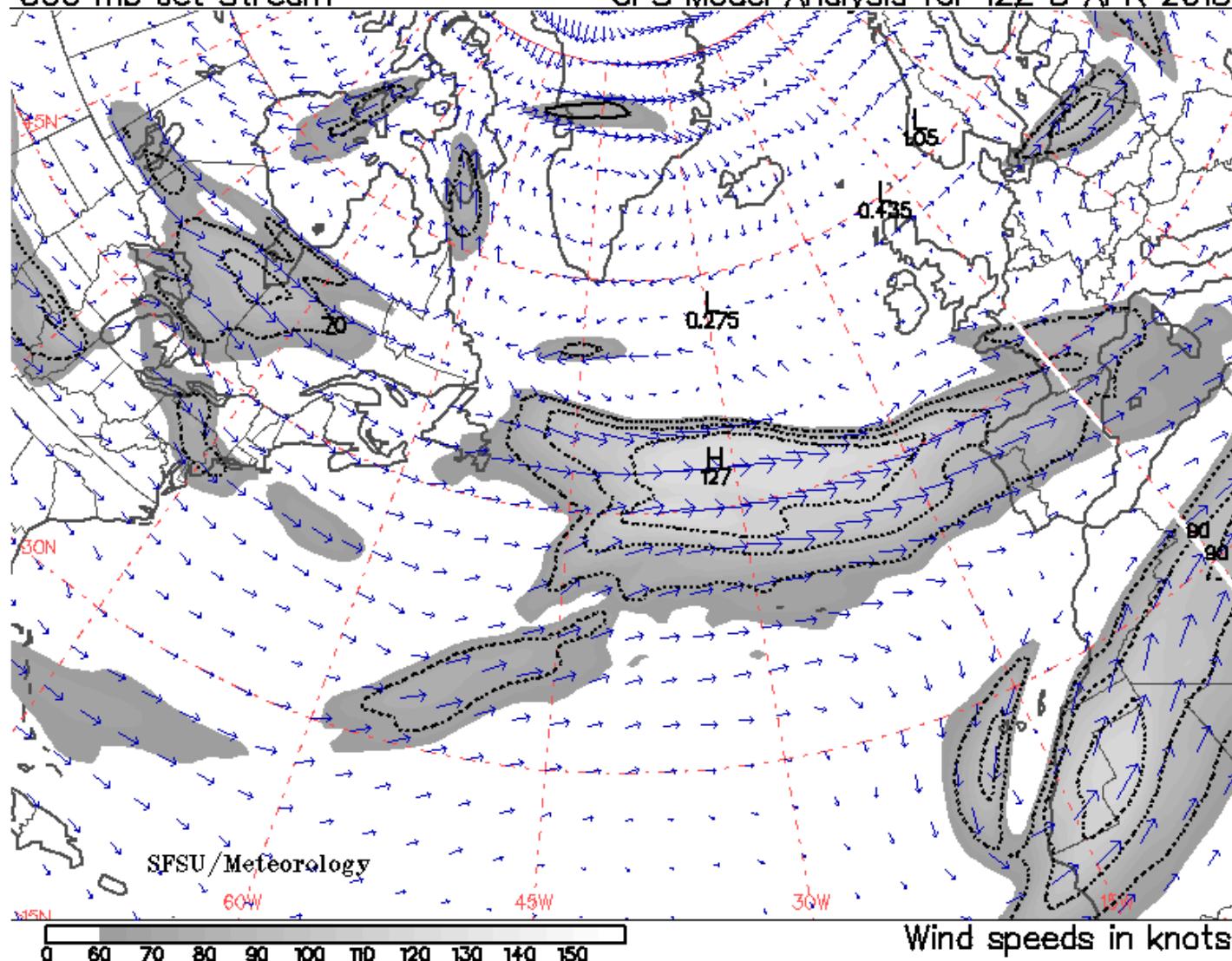
GFS Model Analysis for 12Z 7 APR 2013





300 mb Jet Stream

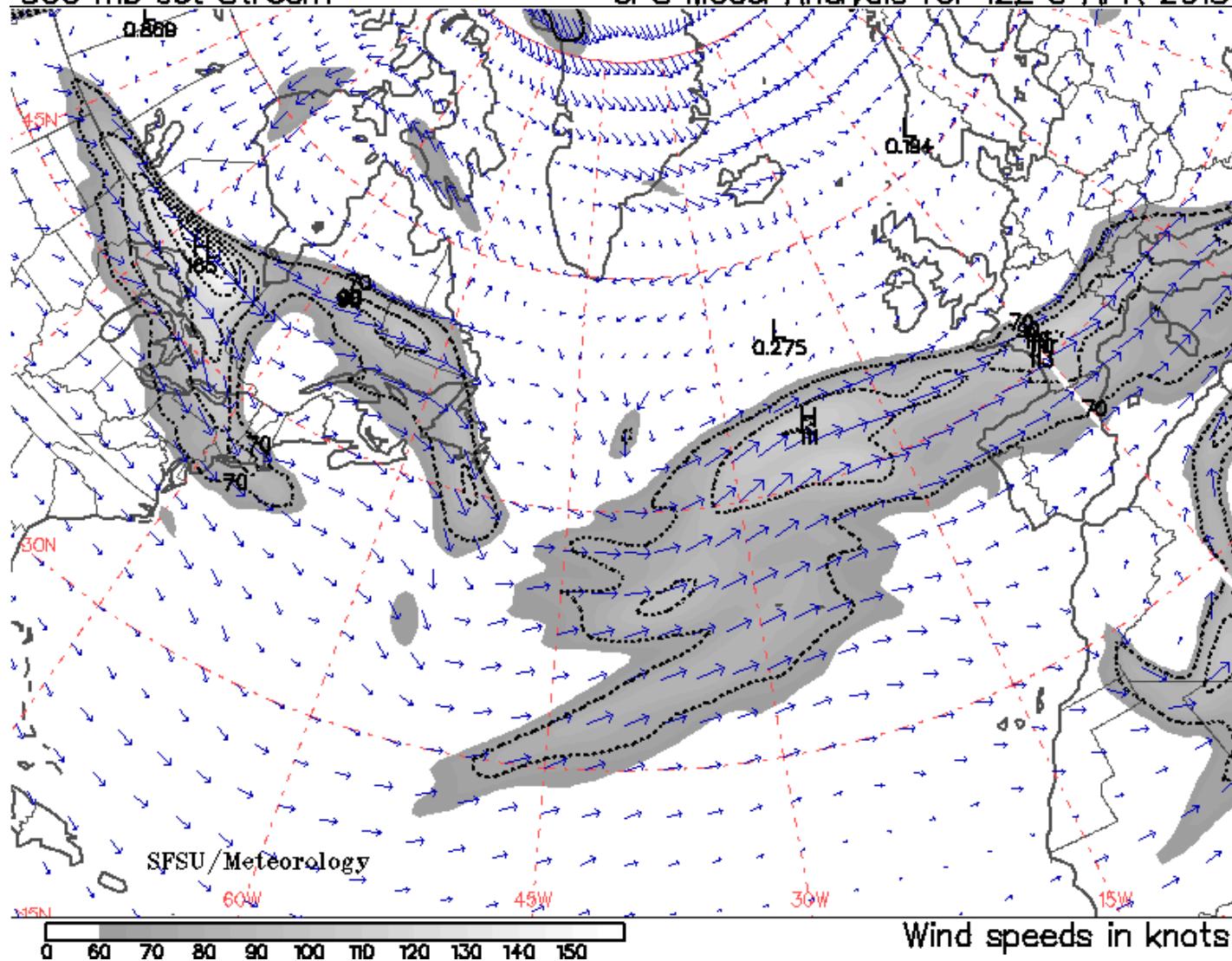
GFS Model Analysis for 12Z 8 APR 2013





300 mb Jet Stream

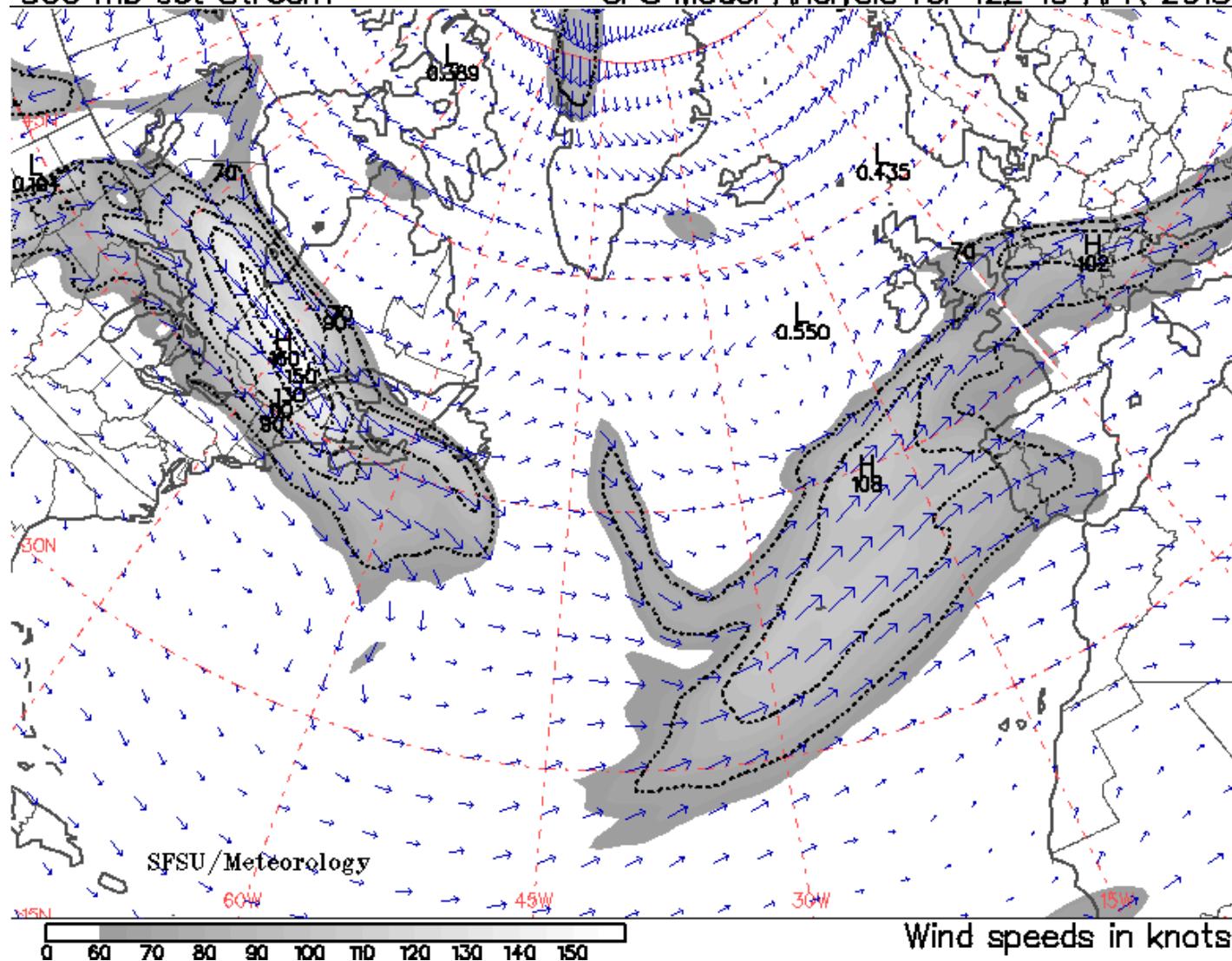
GFS Model Analysis for 12Z 9 APR 2013





300 mb Jet Stream

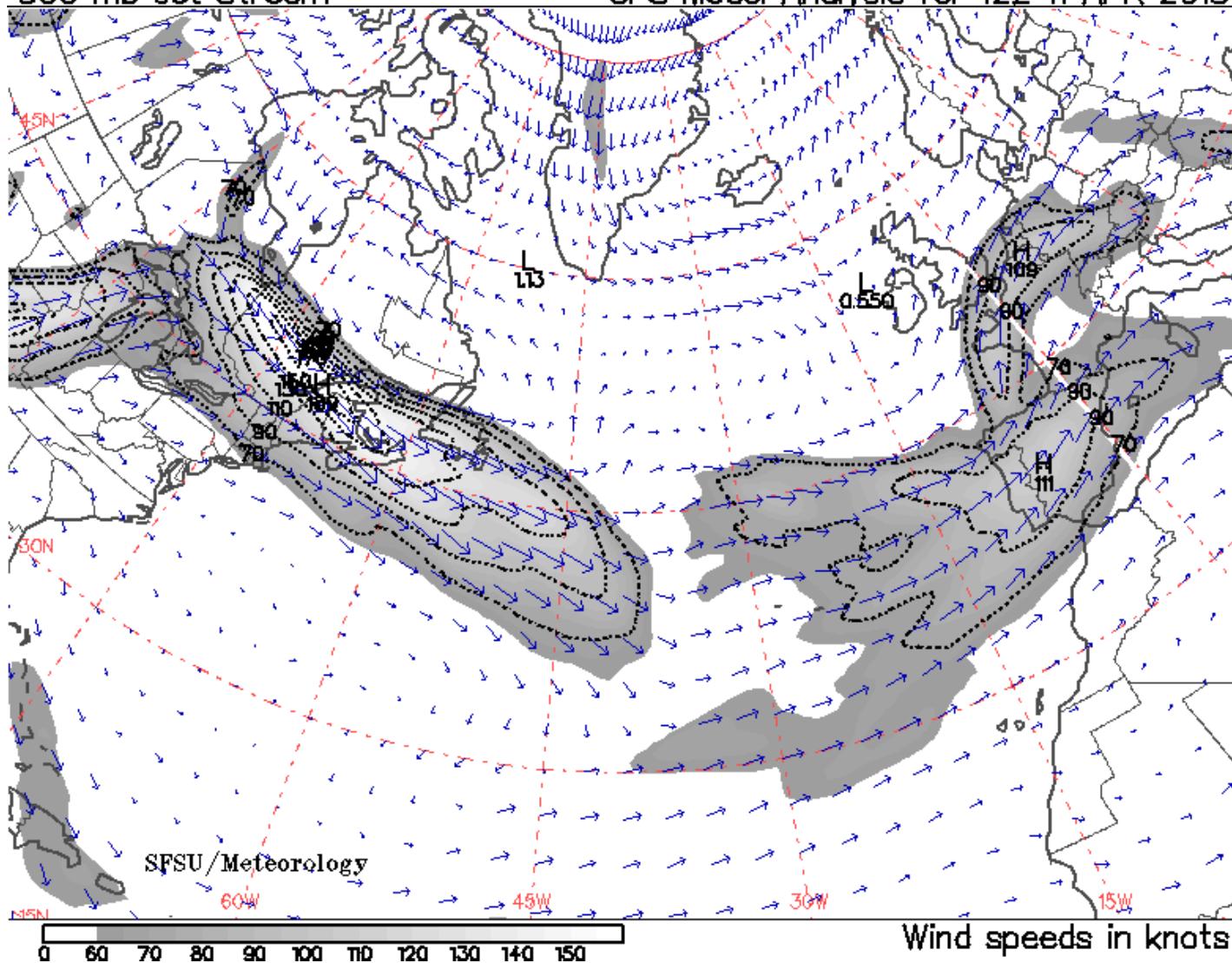
GFS Model Analysis for 12Z 10 APR 2013





300 mb Jet Stream

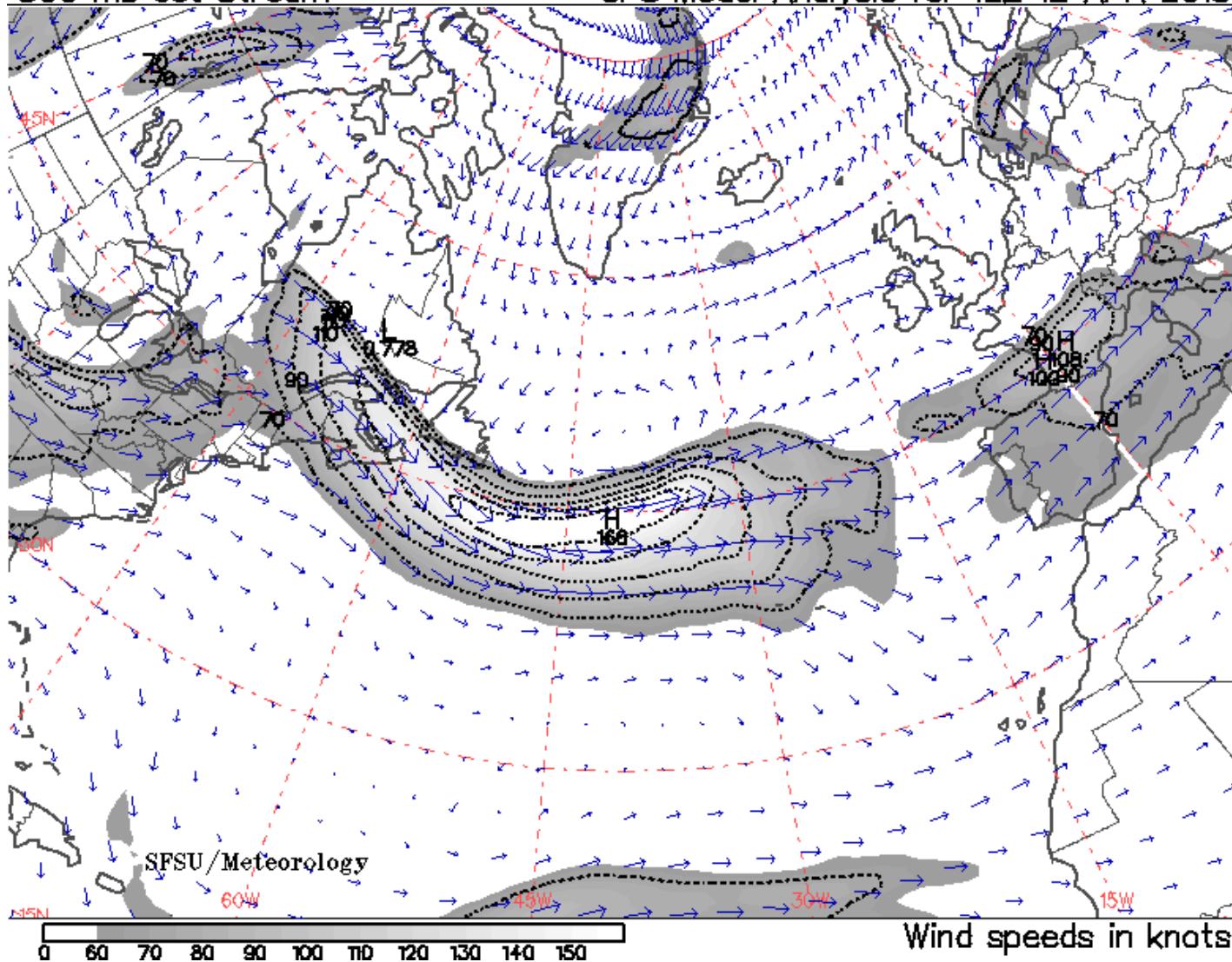
GFS Model Analysis for 12Z 11 APR 2013





300 mb Jet Stream

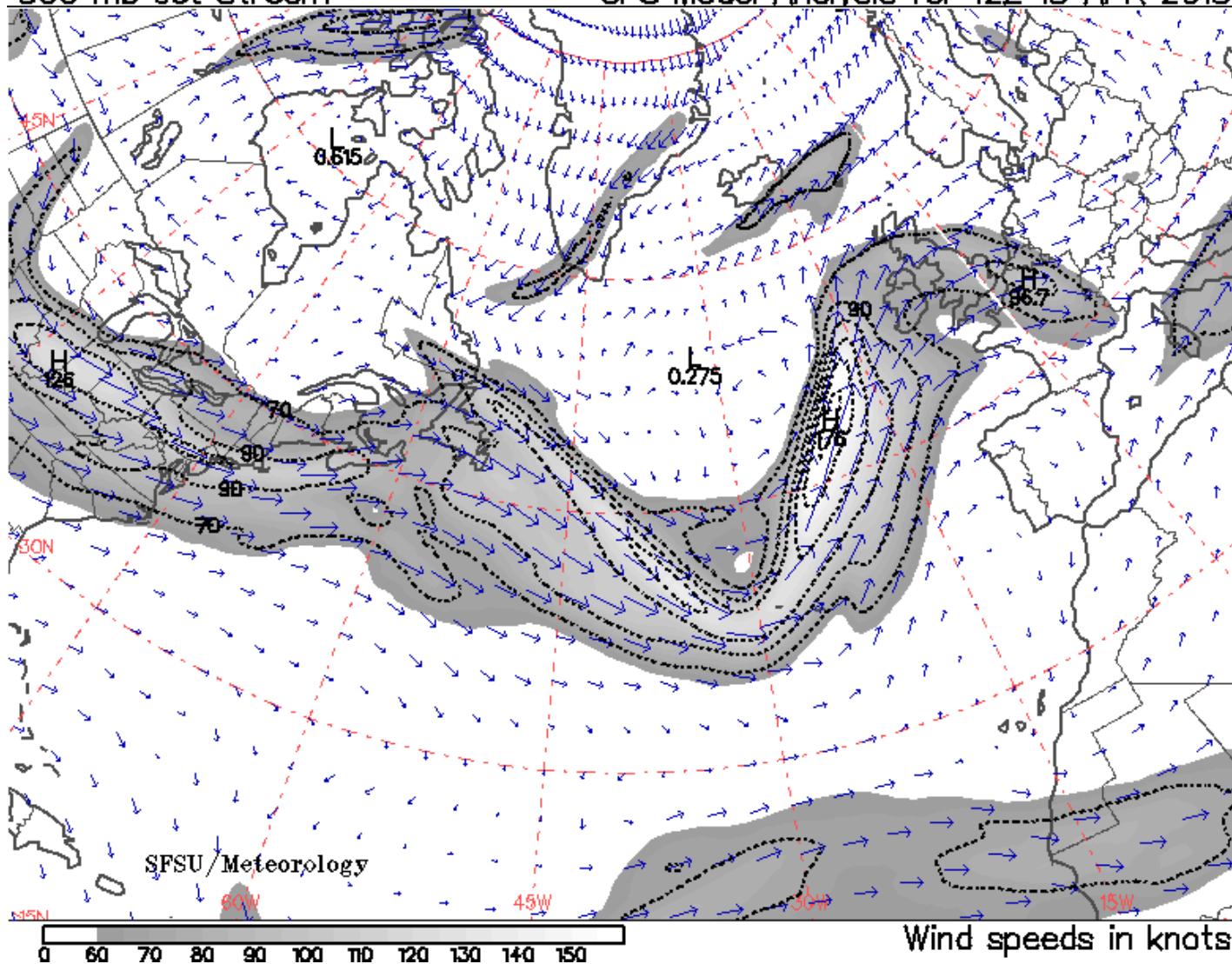
GFS Model Analysis for 12Z 12 APR 2013





300 mb Jet Stream

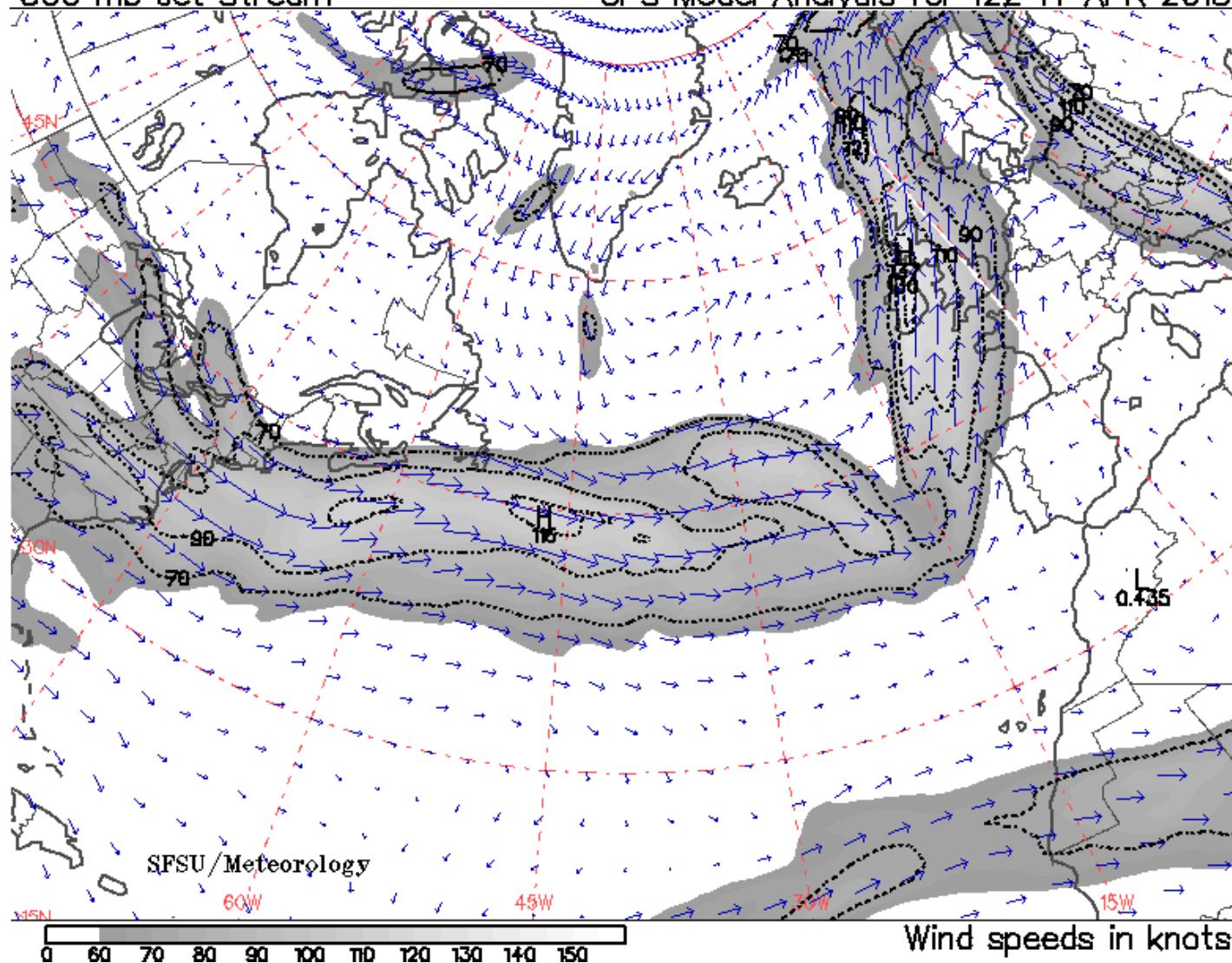
GFS Model Analysis for 12Z 13 APR 2013





300 mb Jet Stream

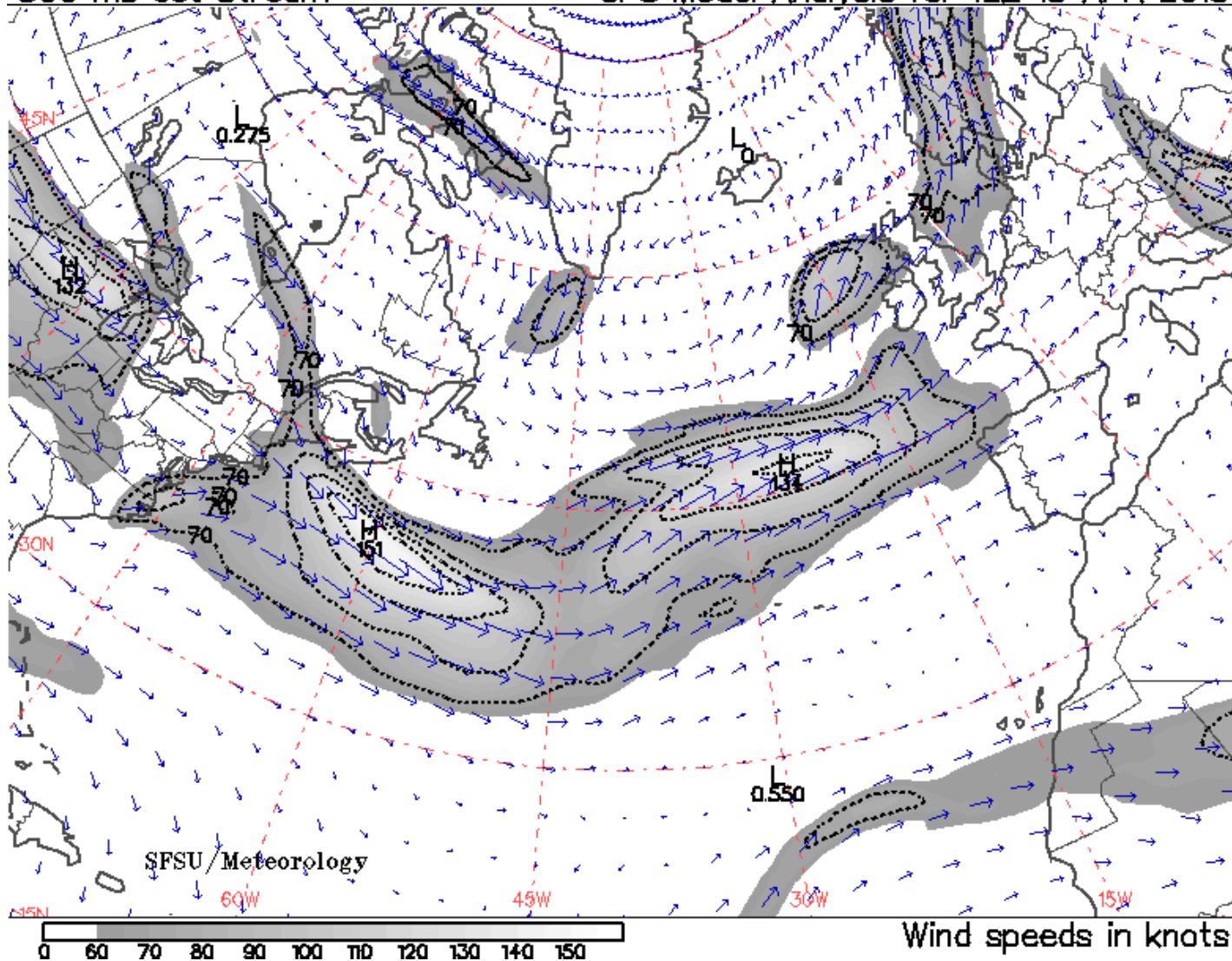
GFS Model Analysis for 12Z 14 APR 2013





300 mb Jet Stream

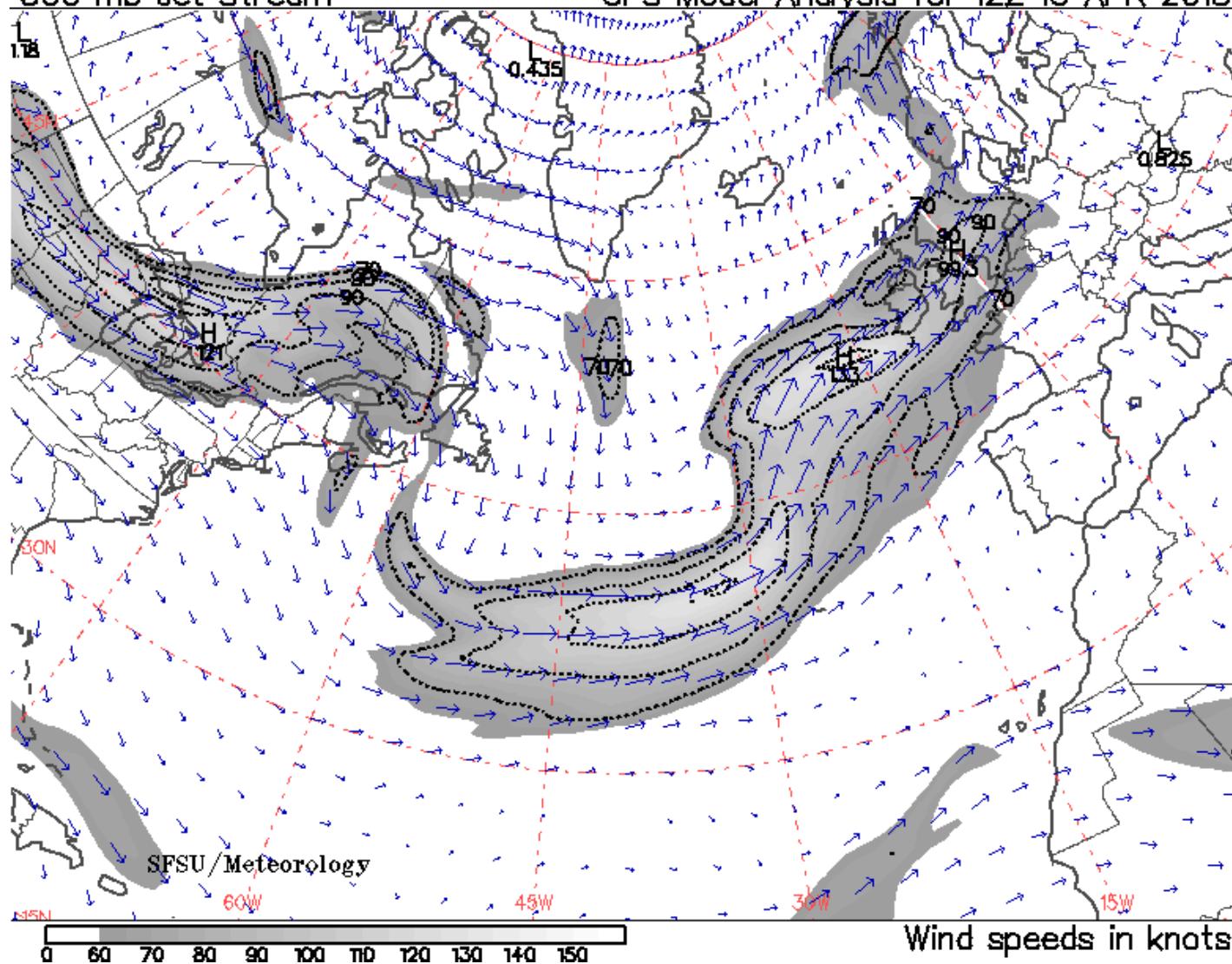
GFS Model Analysis for 12Z 15 APR 2013





300 mb Jet Stream

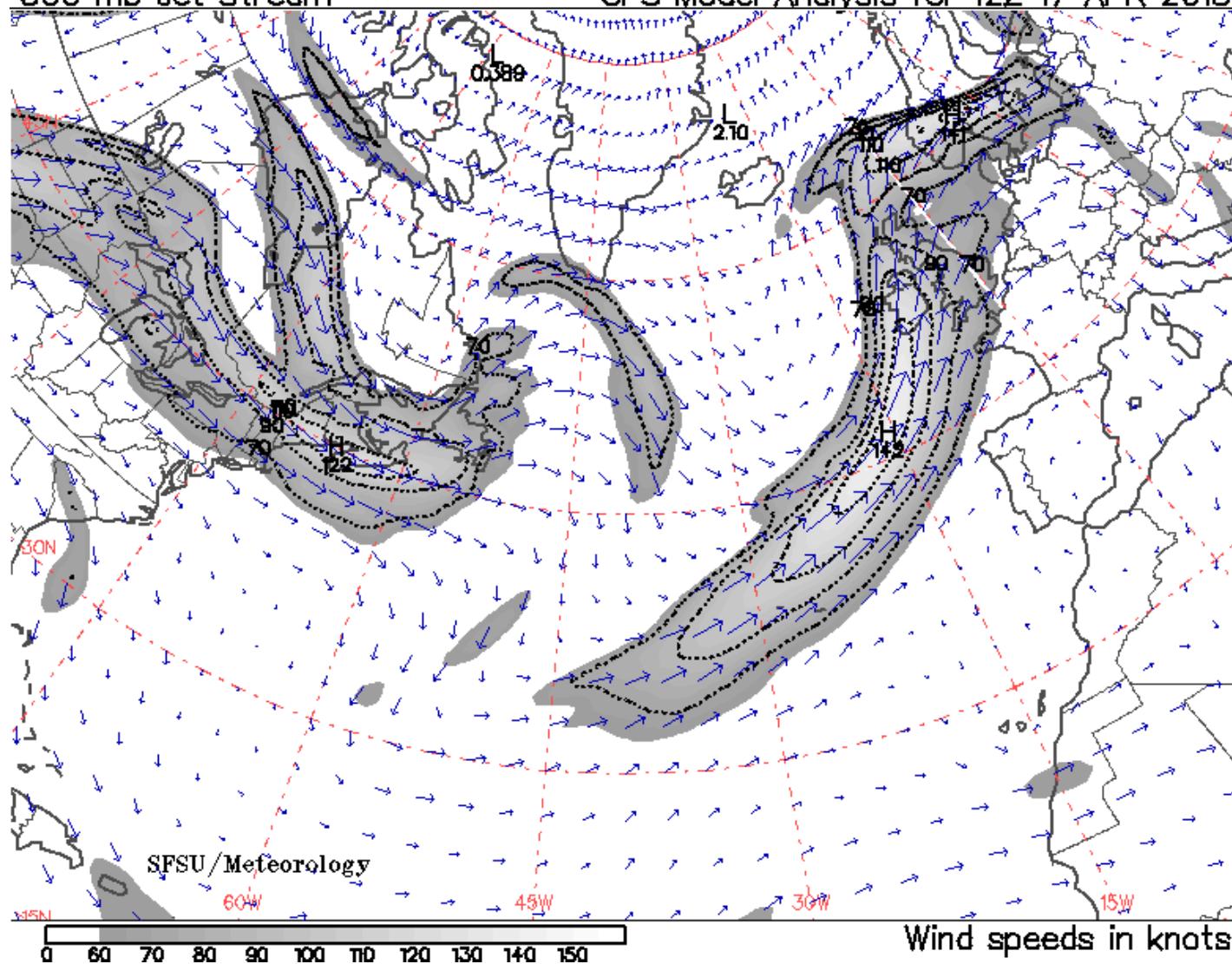
GFS Model Analysis for 12Z 16 APR 2013





300 mb Jet Stream

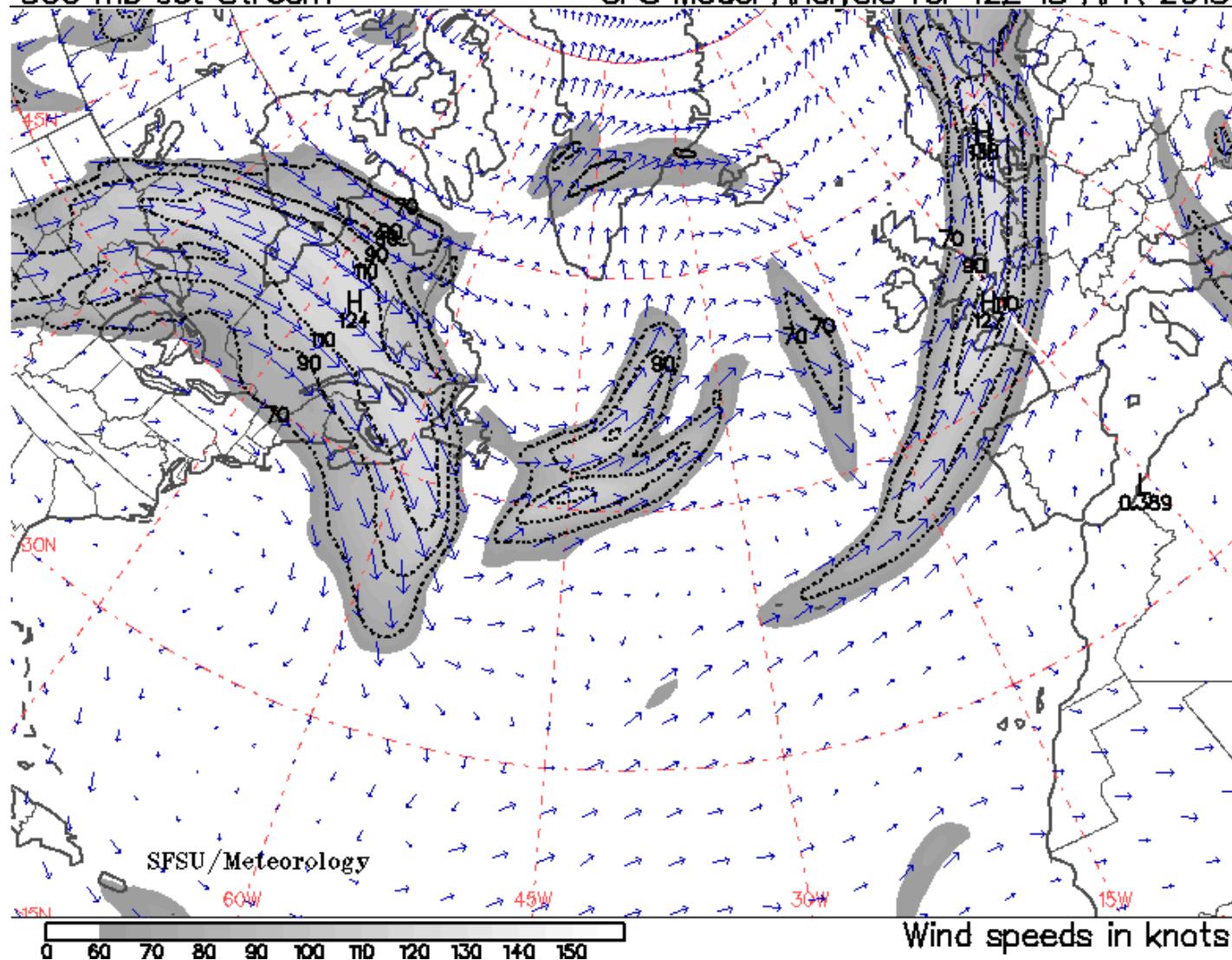
GFS Model Analysis for 12Z 17 APR 2013





300 mb Jet Stream

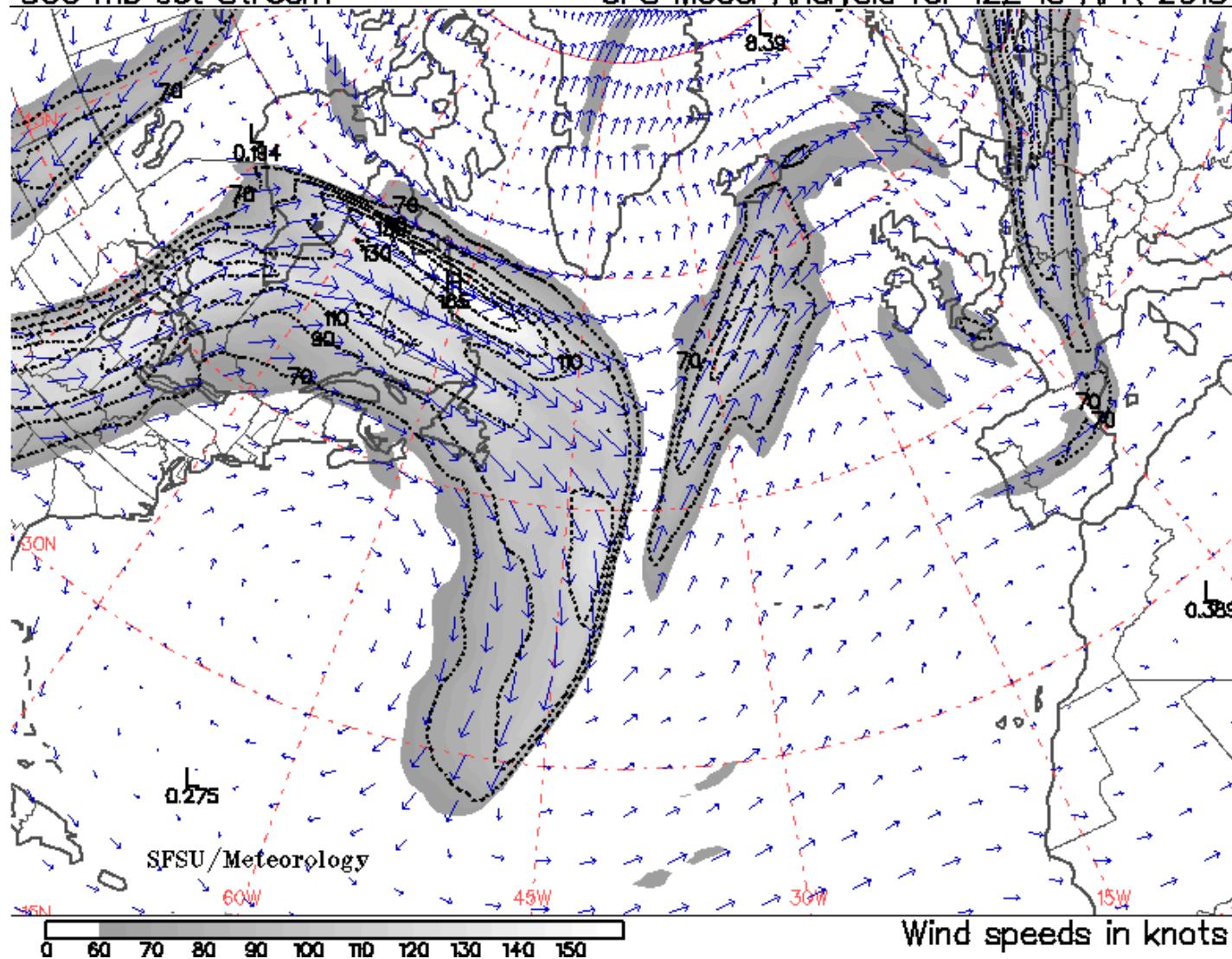
GFS Model Analysis for 12Z 18 APR 2013





300 mb Jet Stream

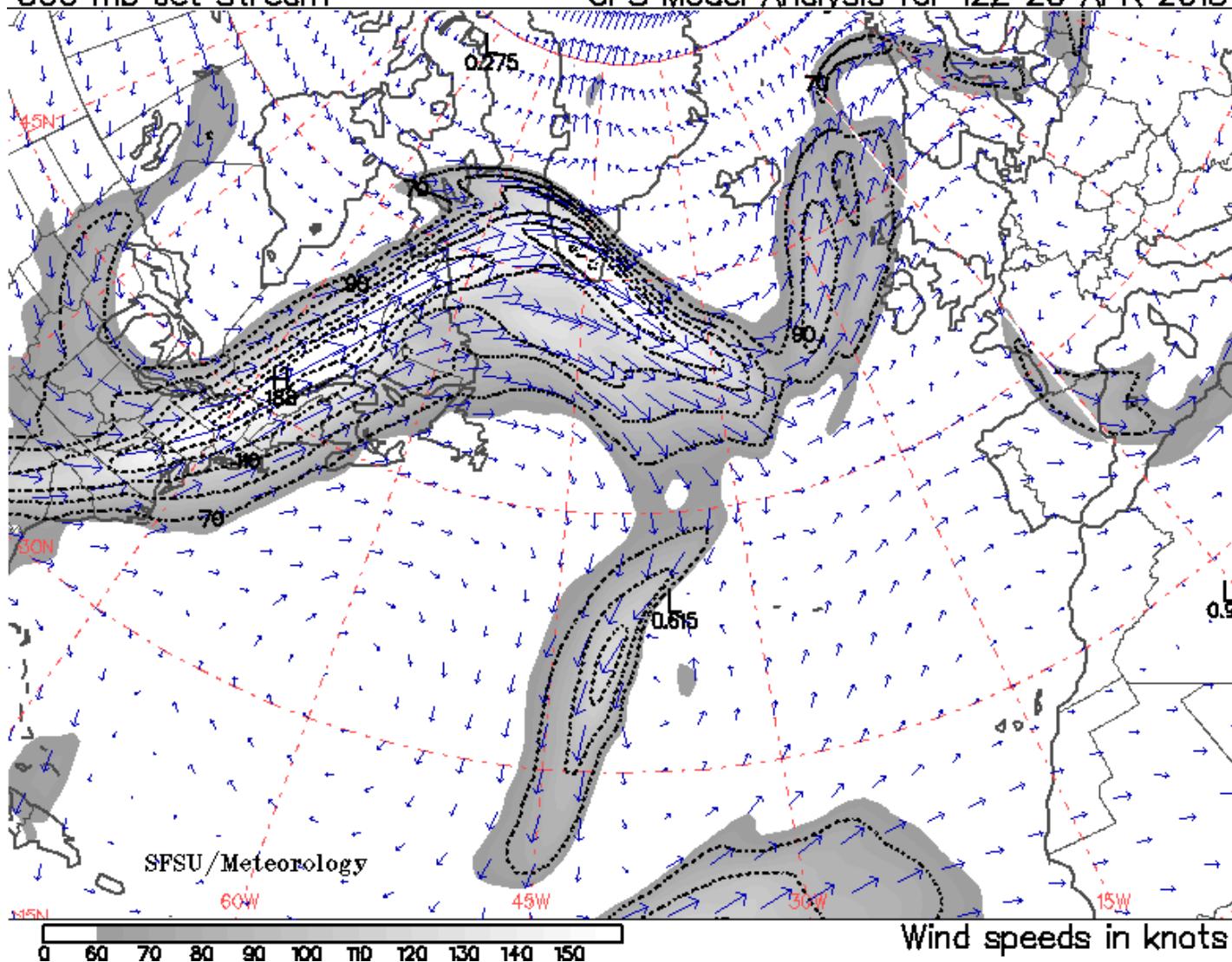
GFS Model Analysis for 12Z 19 APR 2013





300 mb Jet Stream

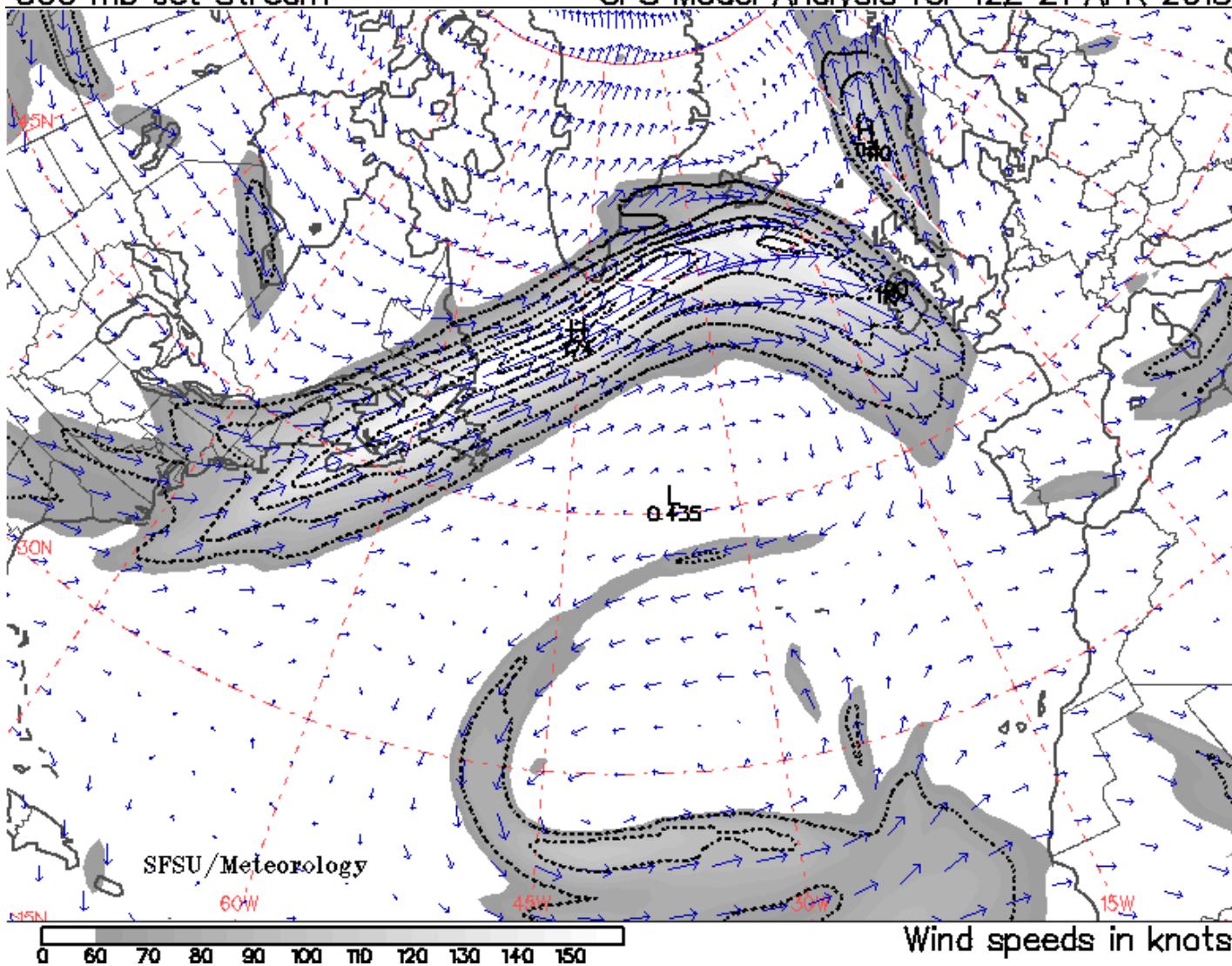
GFS Model Analysis for 12Z 20 APR 2013





300 mb Jet Stream

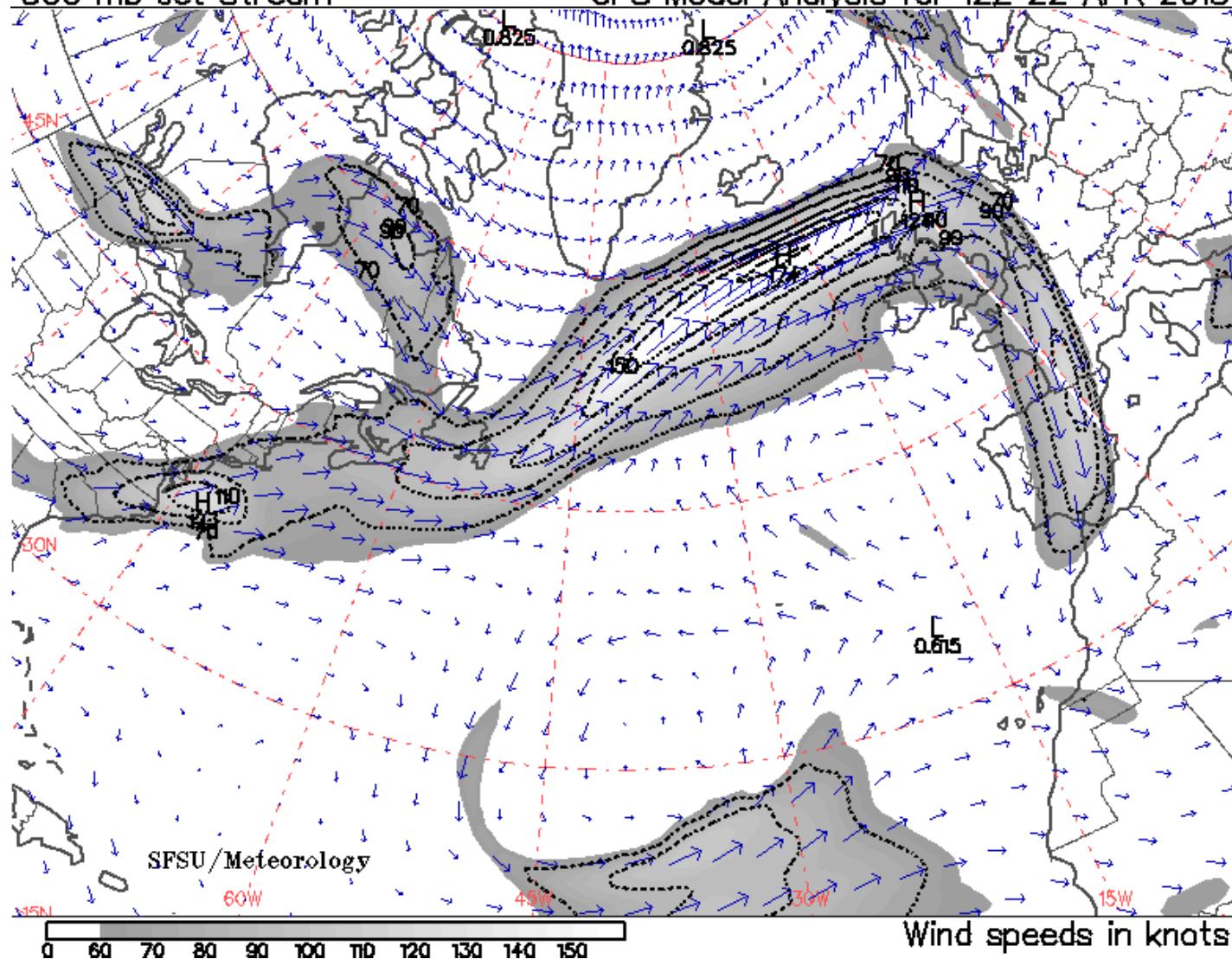
GFS Model Analysis for 12Z 21 APR 2013





300 mb Jet Stream

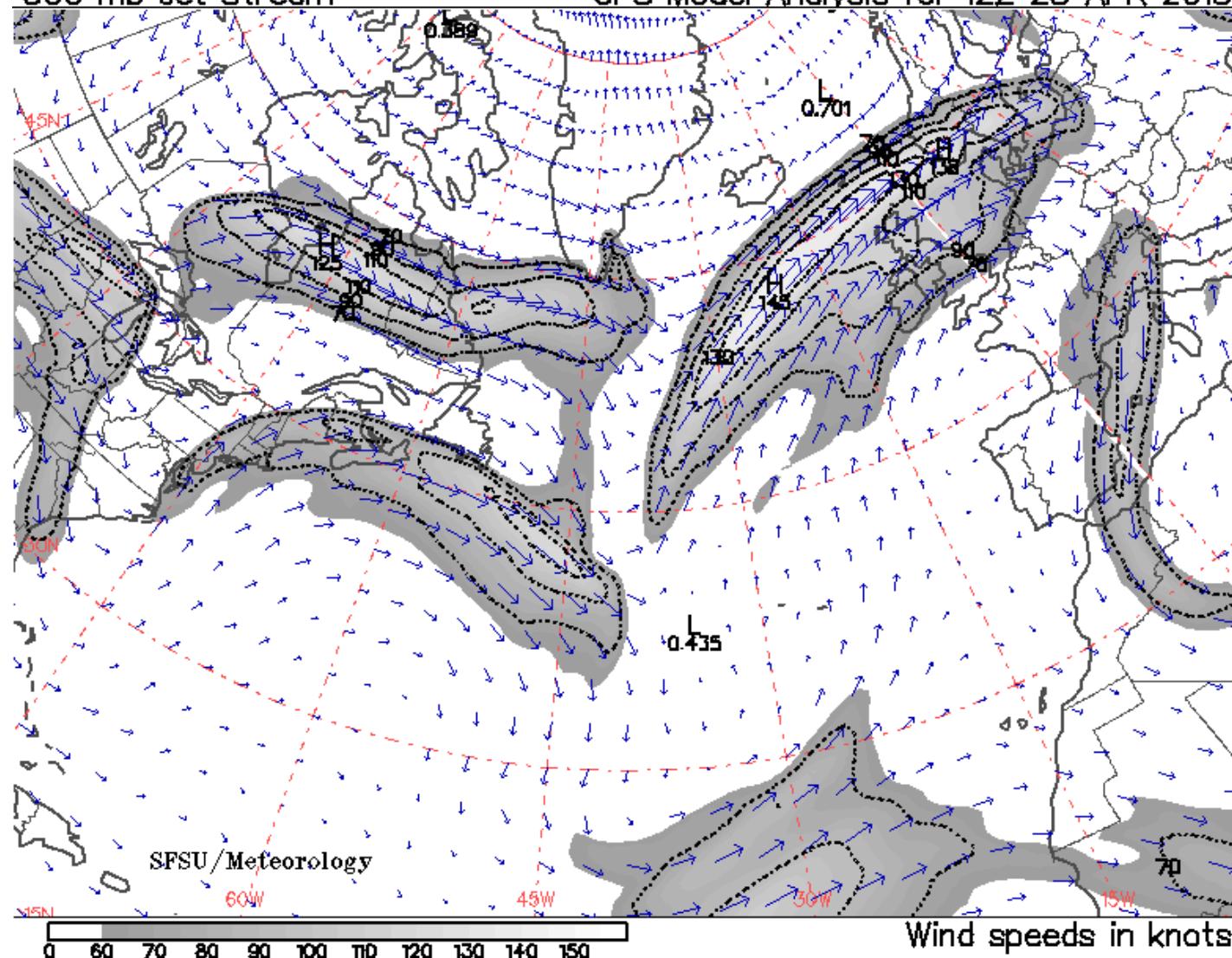
GFS Model Analysis for 12Z 22 APR 2013





300 mb Jet Stream

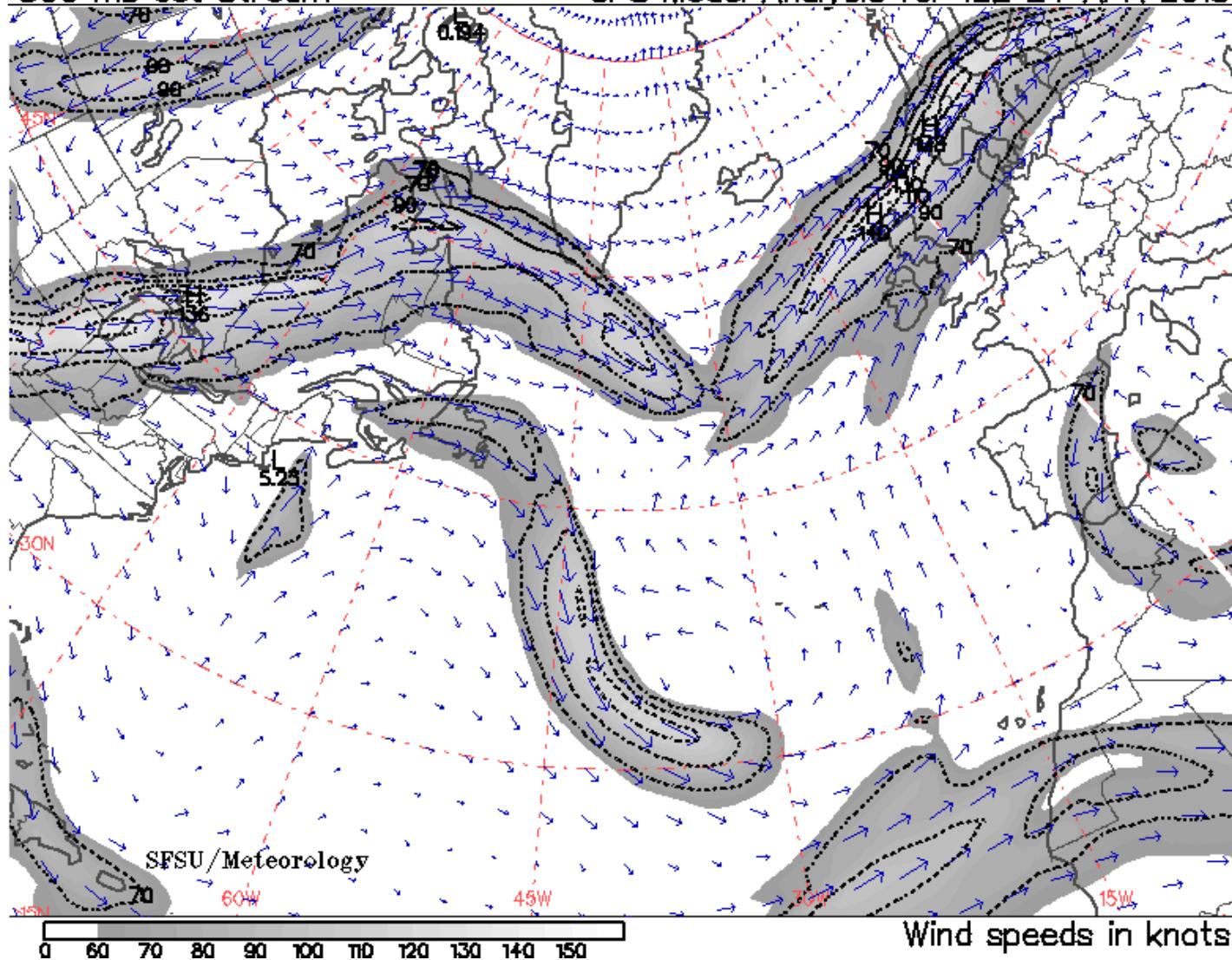
GFS Model Analysis for 12Z 23 APR 2013





300 mb Jet Stream

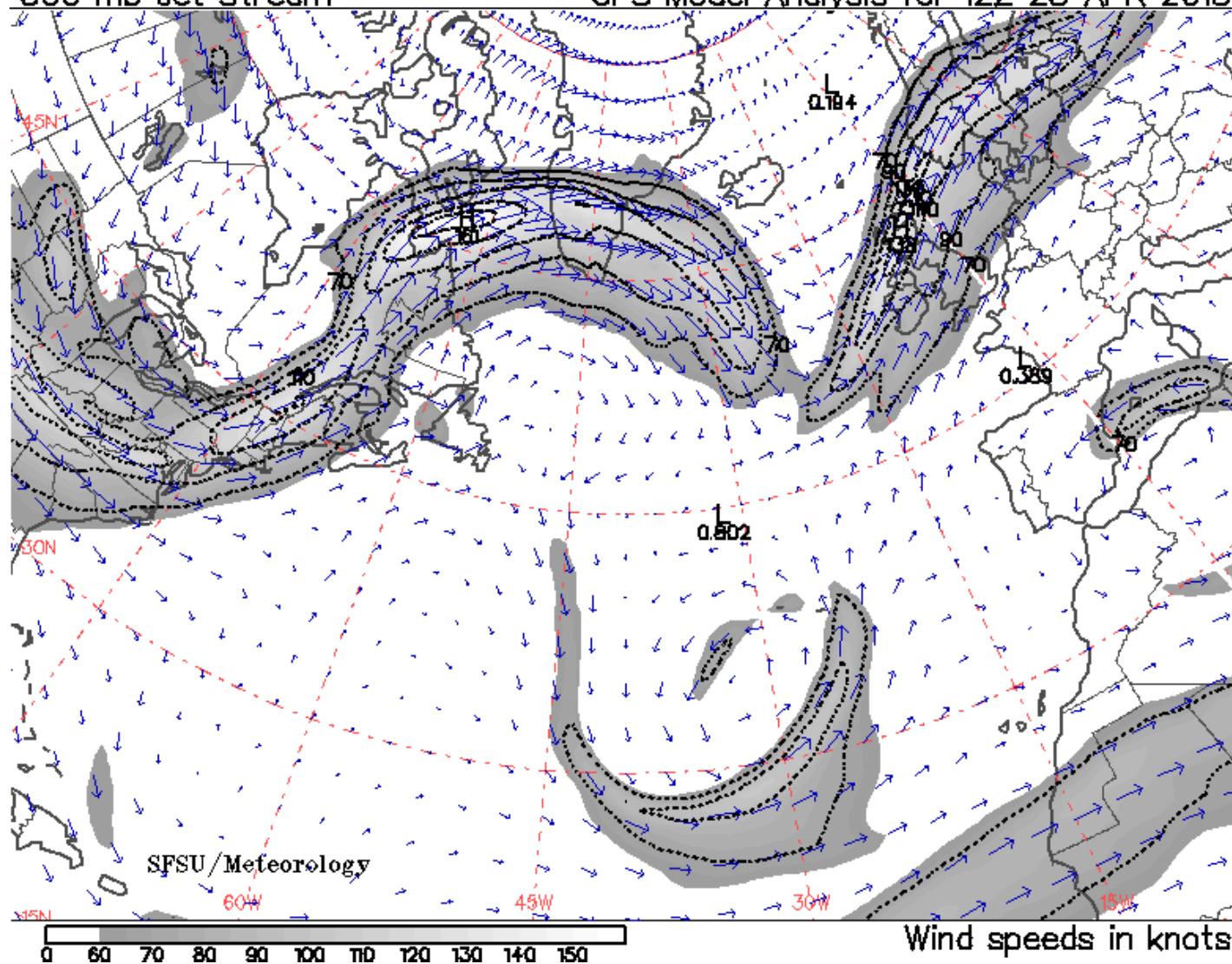
GFS Model Analysis for 12Z 24 APR 2013





300 mb Jet Stream

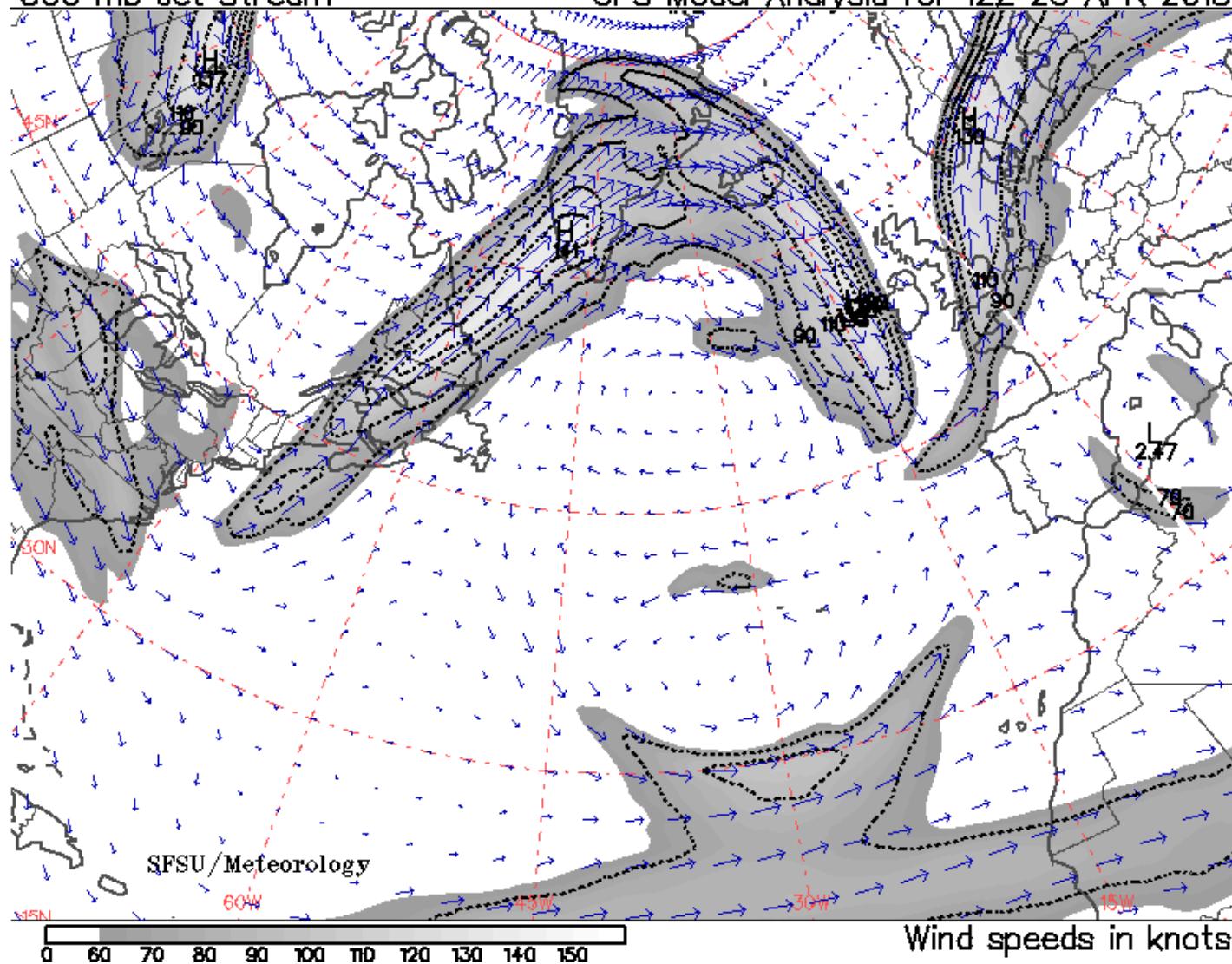
GFS Model Analysis for 12Z 25 APR 2013





300 mb Jet Stream

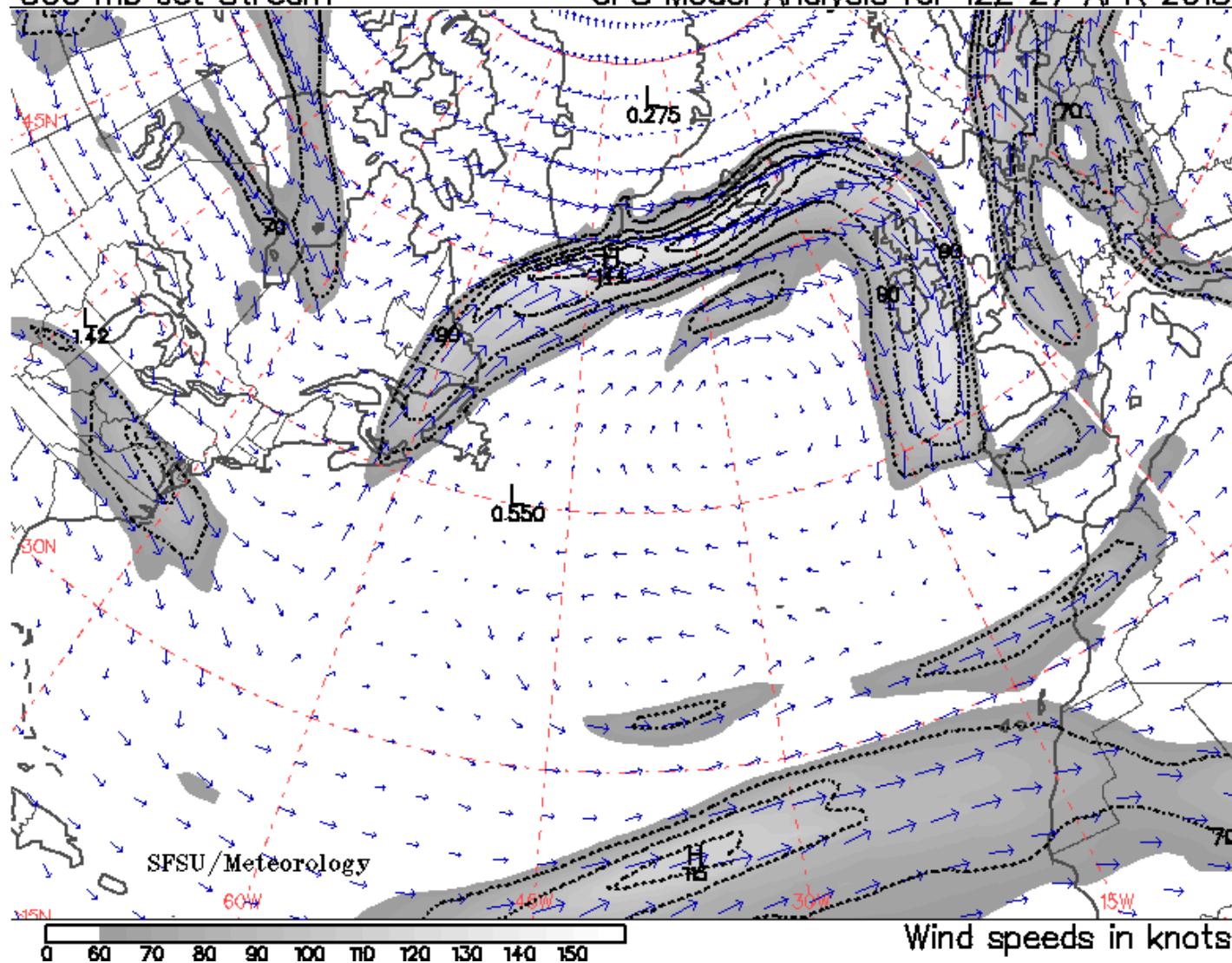
GFS Model Analysis for 12Z 26 APR 2013





300 mb Jet Stream

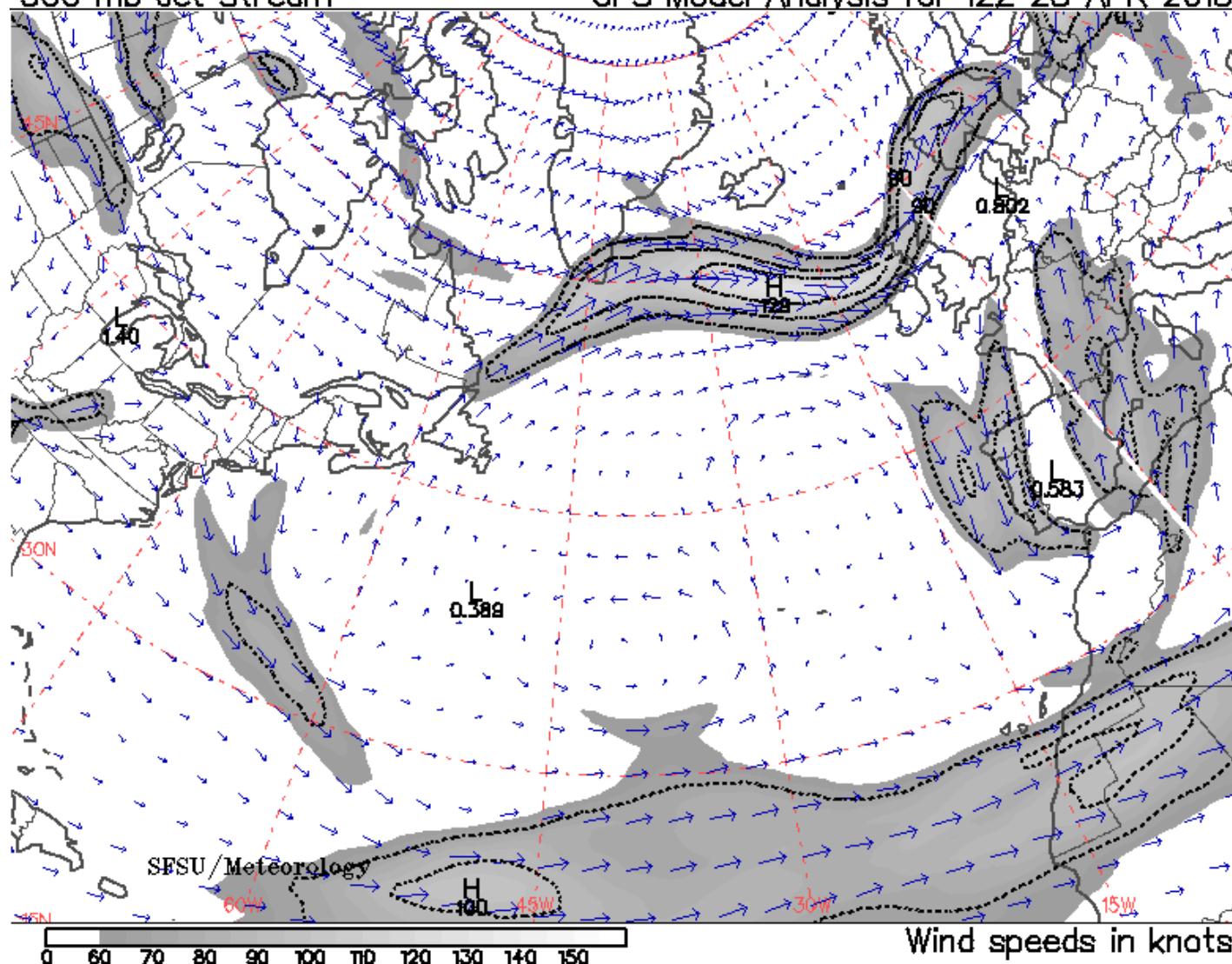
GFS Model Analysis for 12Z 27 APR 2013





300 mb Jet Stream

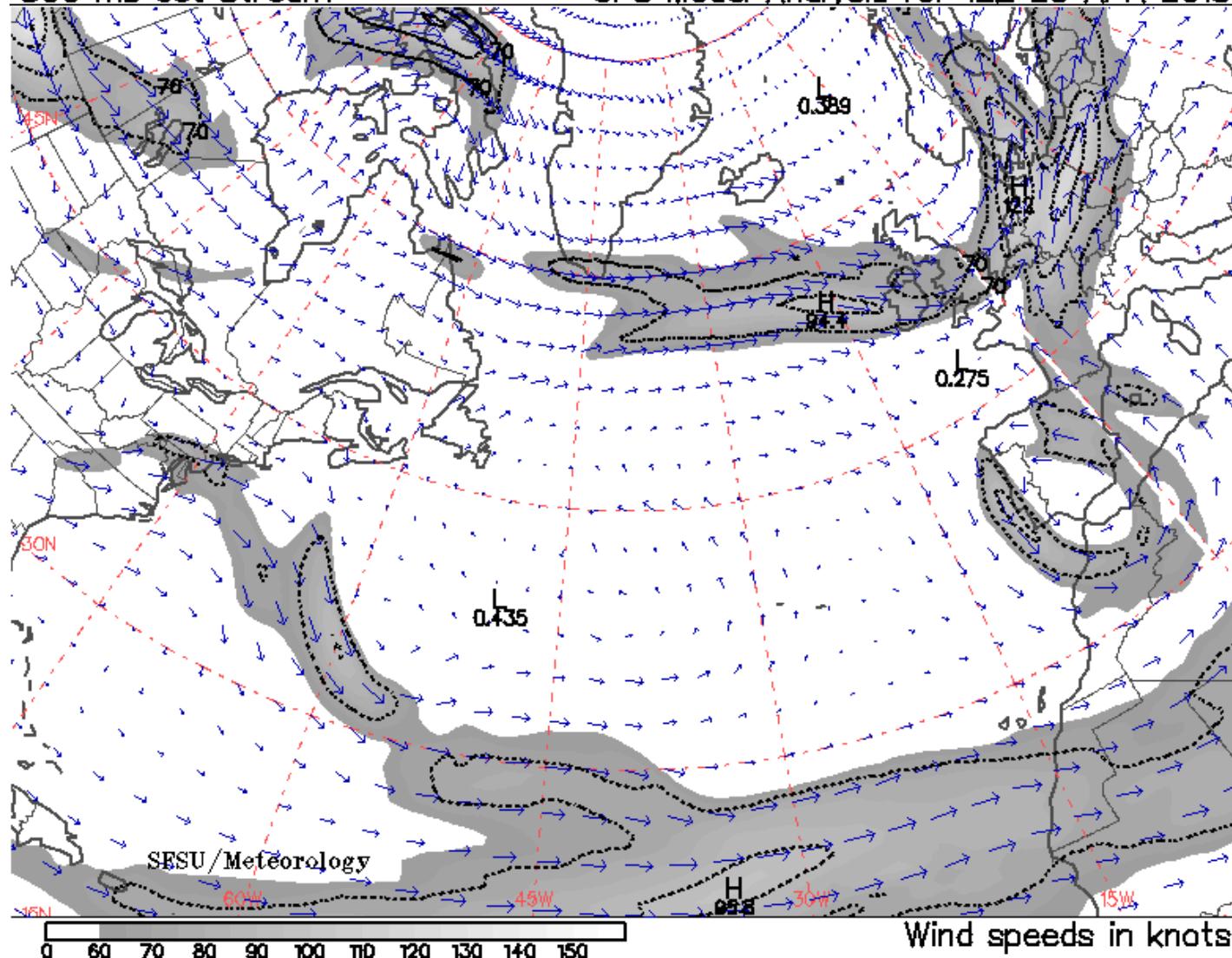
GFS Model Analysis for 12Z 28 APR 2013





300 mb Jet Stream

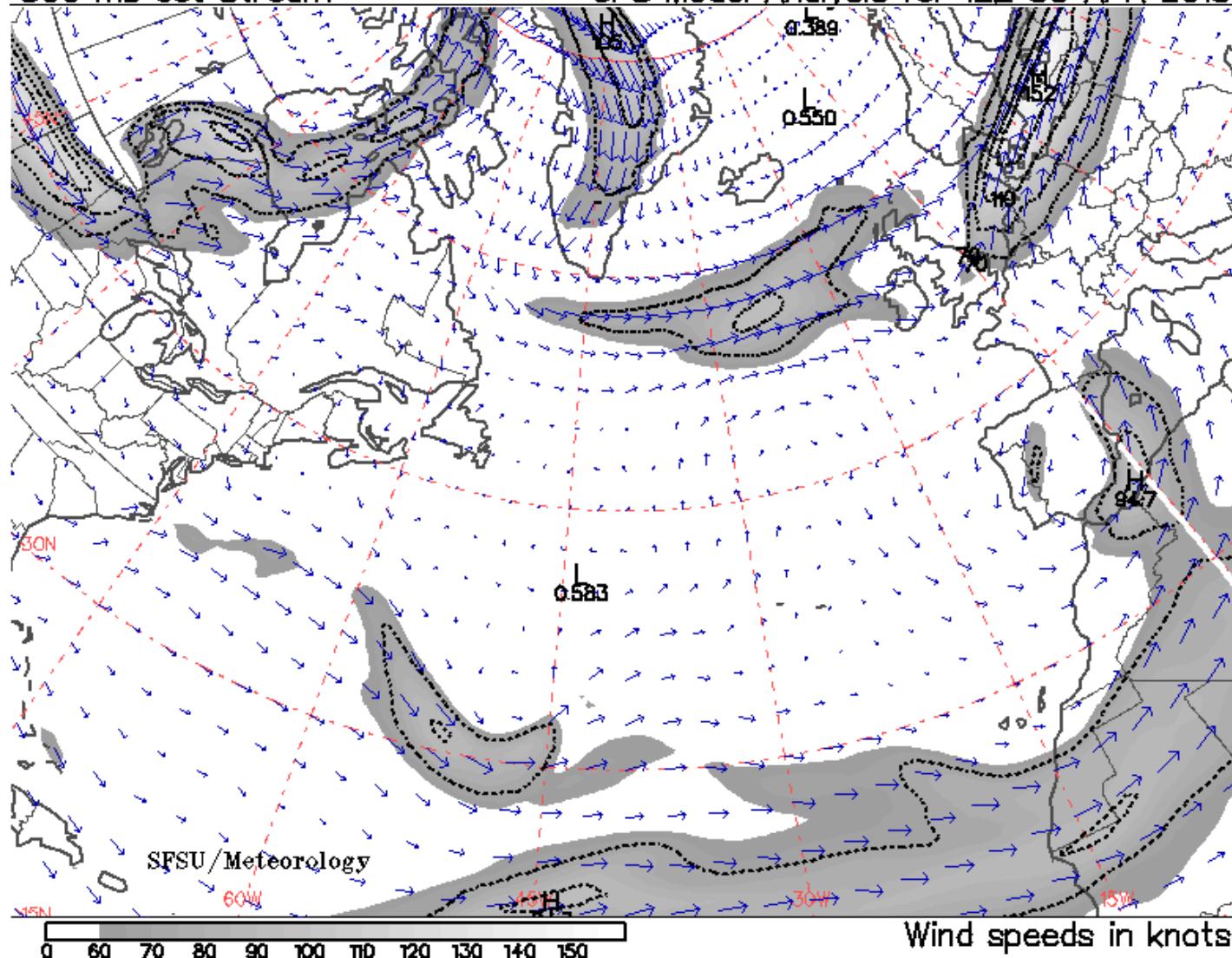
GFS Model Analysis for 12Z 29 APR 2013





300 mb Jet Stream

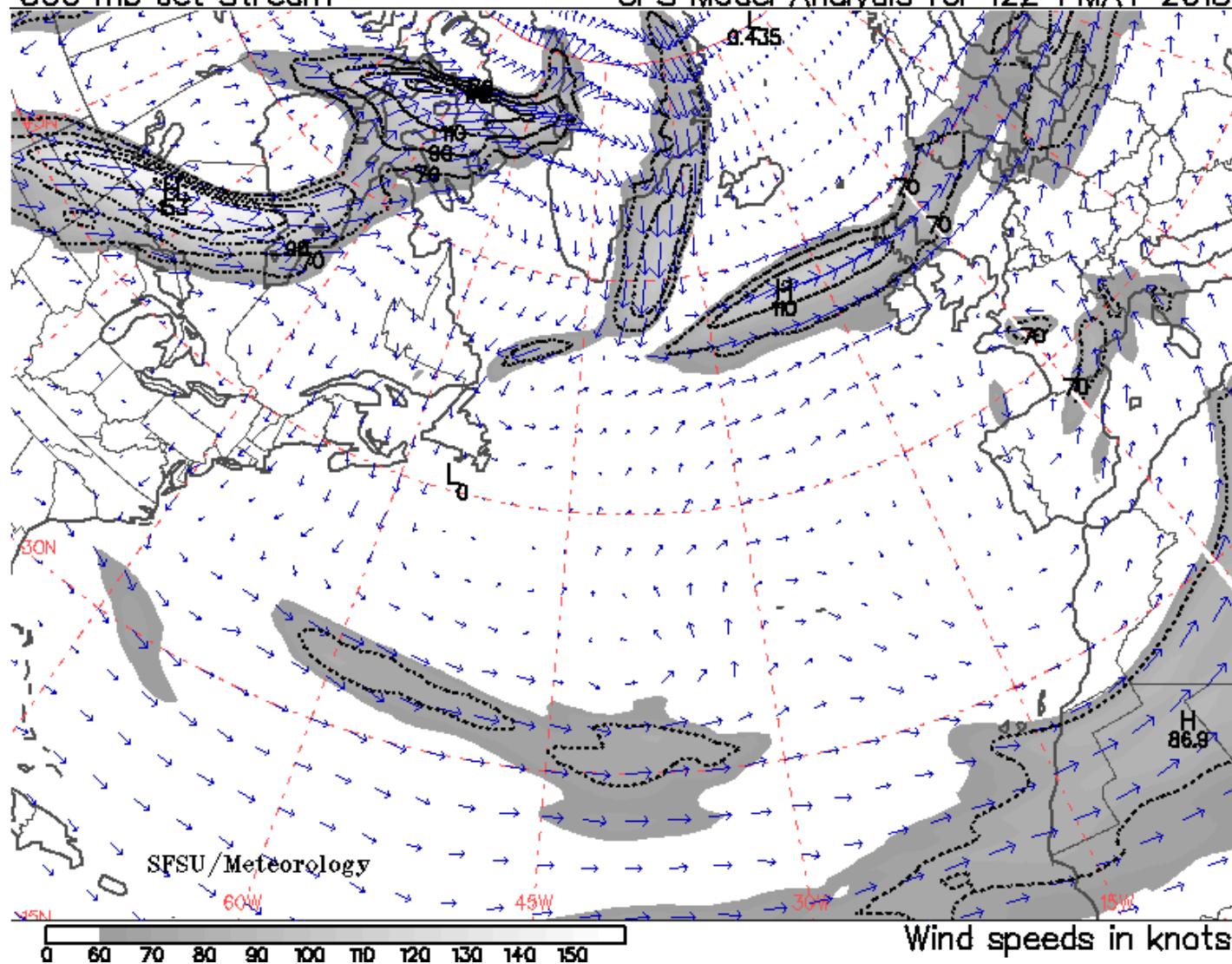
GFS Model Analysis for 12Z 30 APR 2013





300 mb Jet Stream

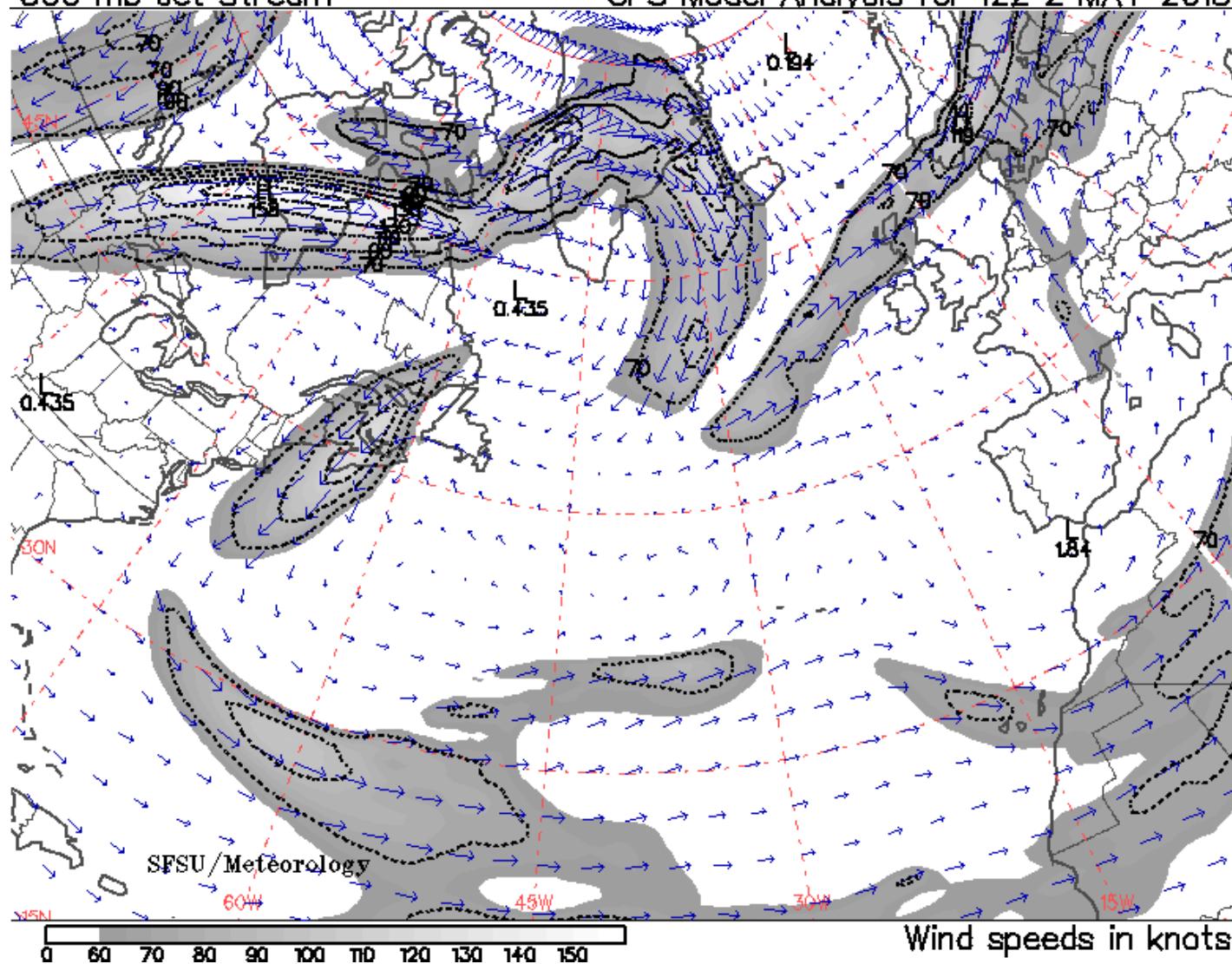
GFS Model Analysis for 12Z 1 MAY 2013





300 mb Jet Stream

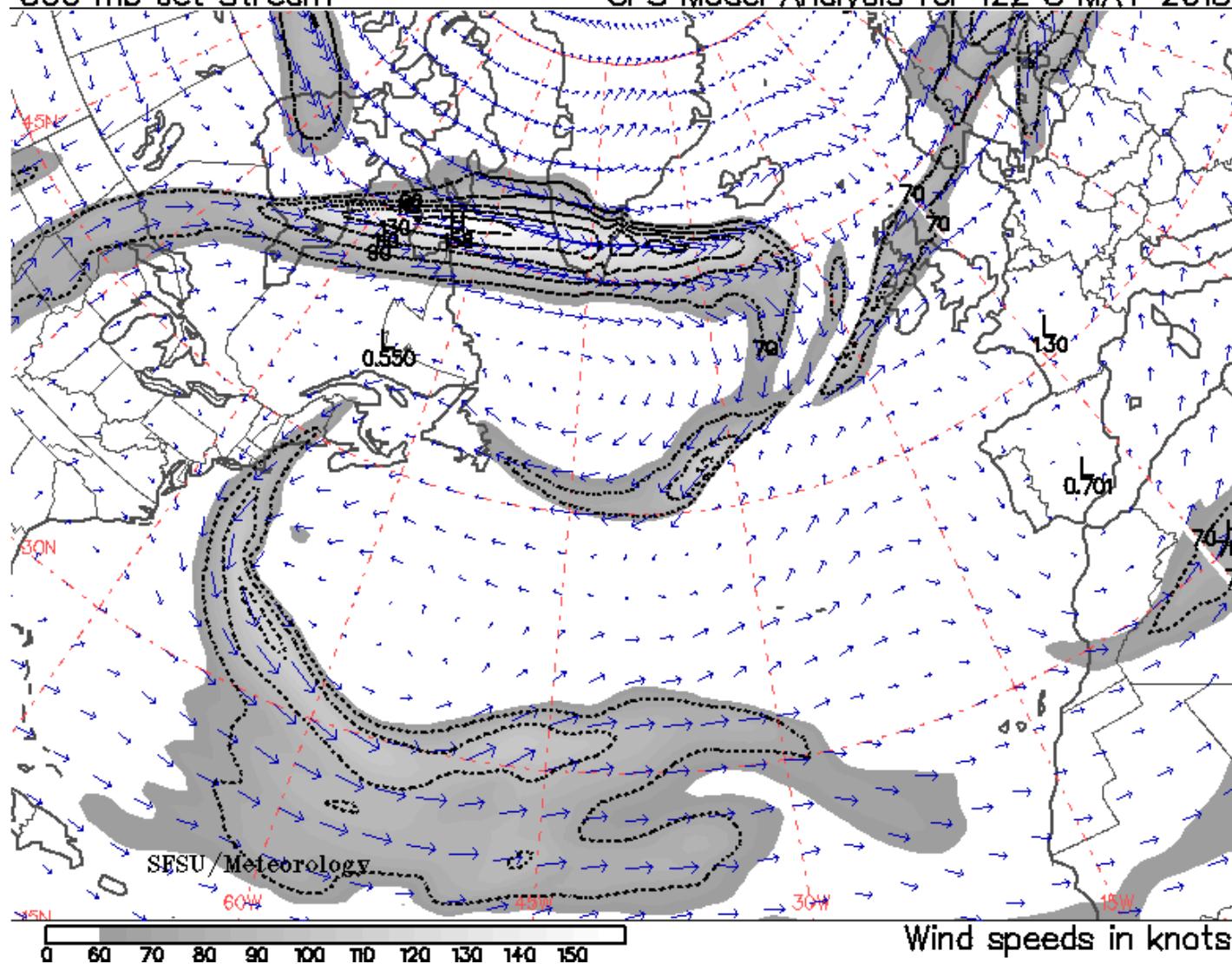
GFS Model Analysis for 12Z 2 MAY 2013





300 mb Jet Stream

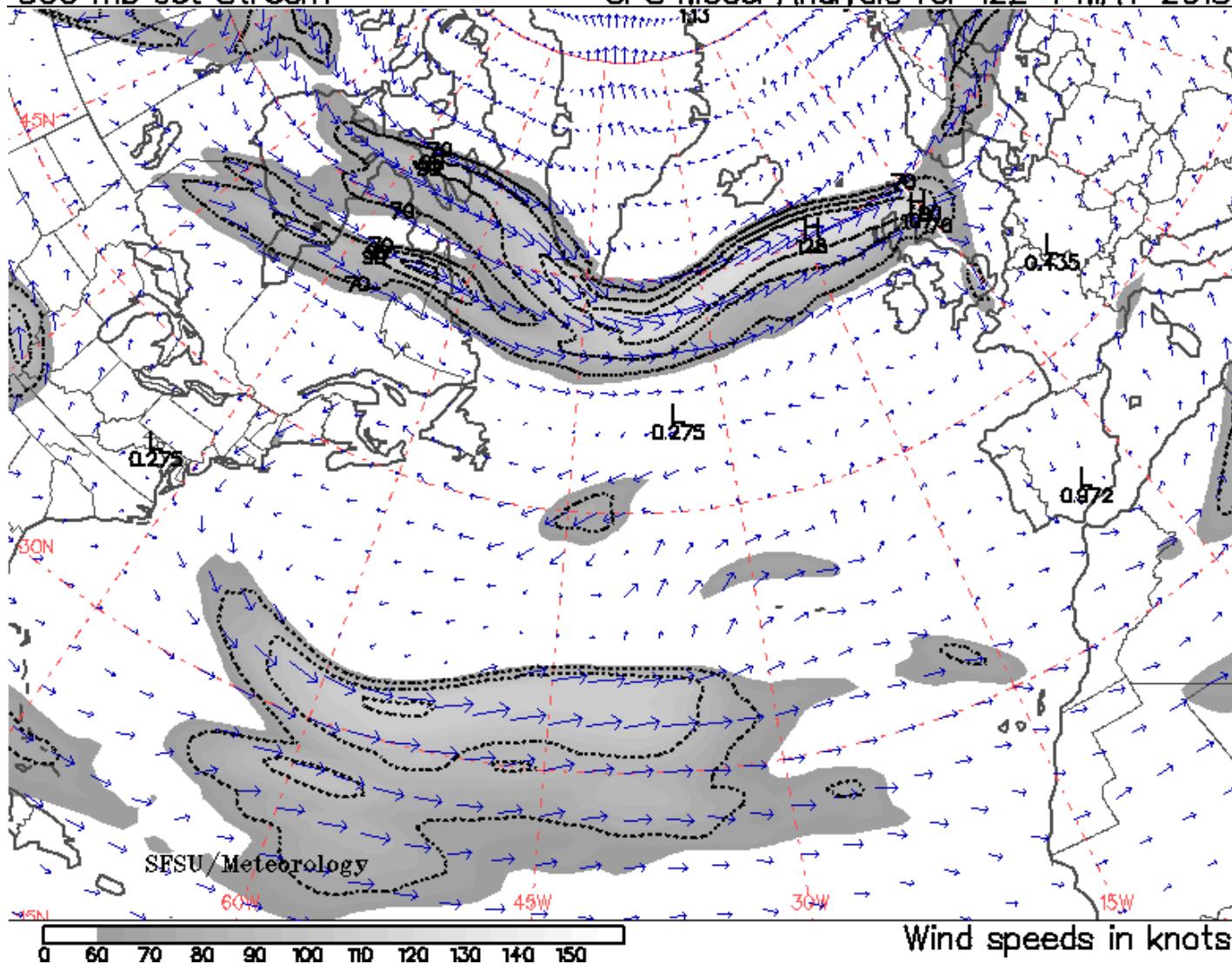
GFS Model Analysis for 12Z 3 MAY 2013





300 mb Jet Stream

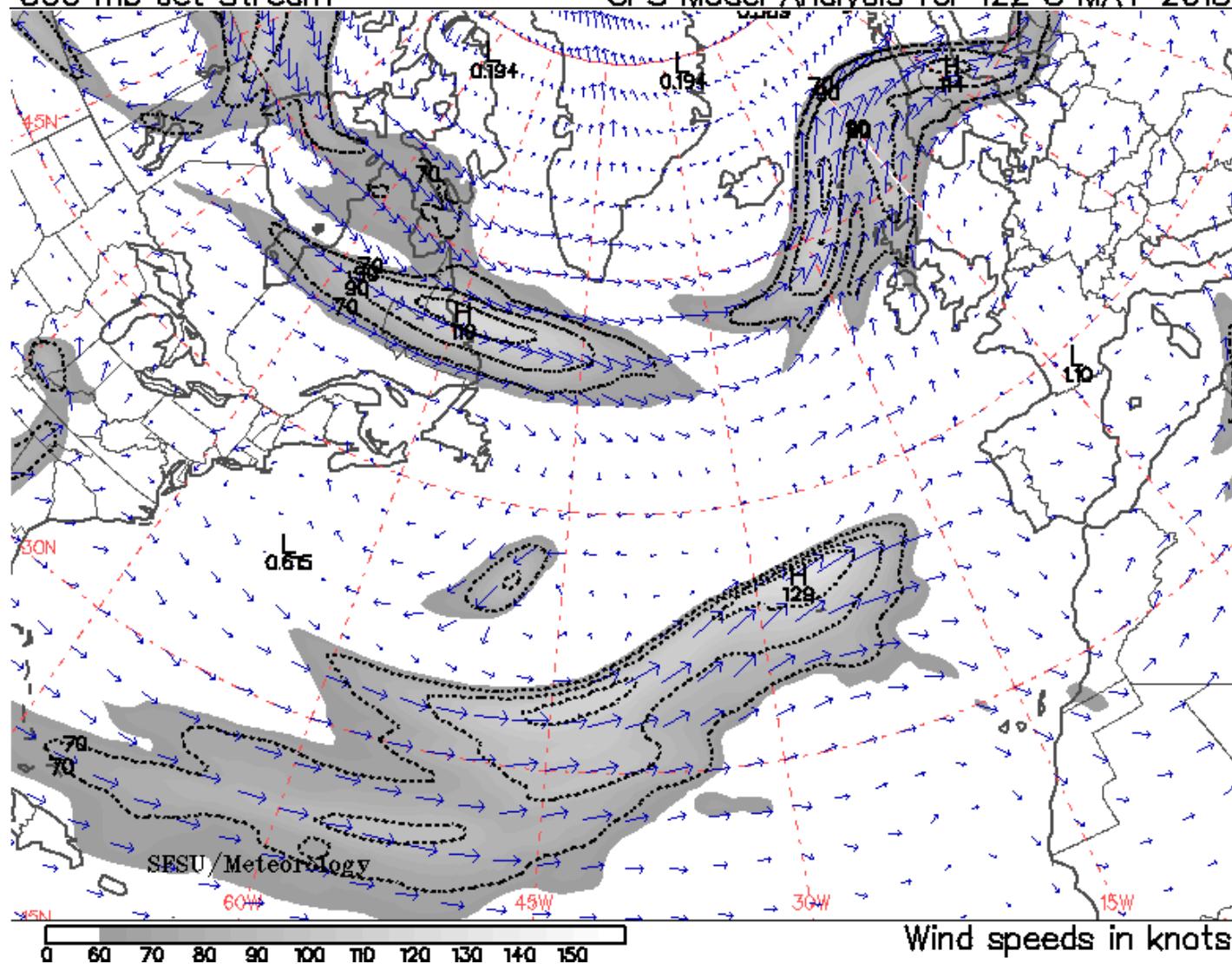
GFS Model Analysis for 12Z 4 MAY 2013





300 mb Jet Stream

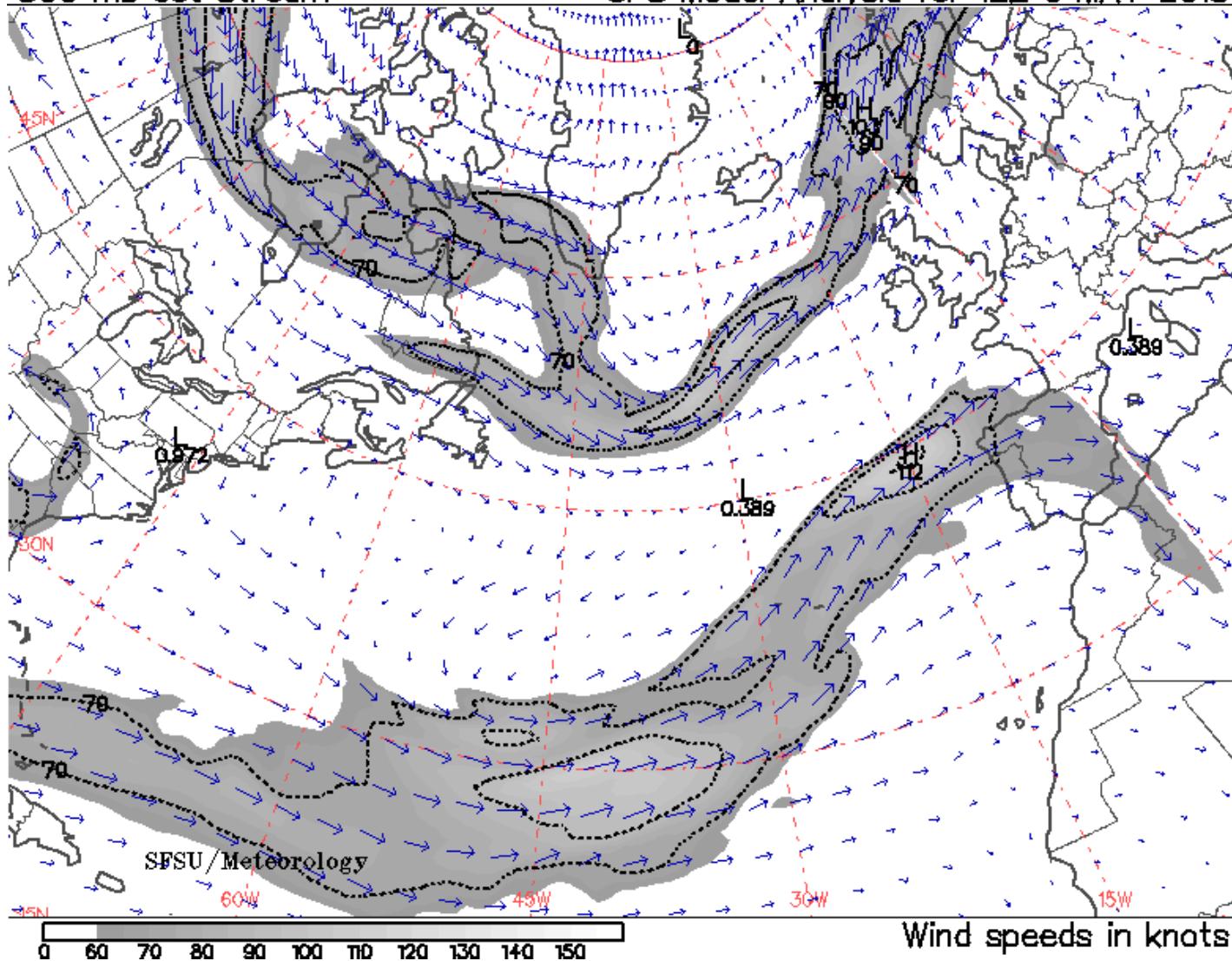
GFS Model Analysis for 12Z 5 MAY 2013





300 mb Jet Stream

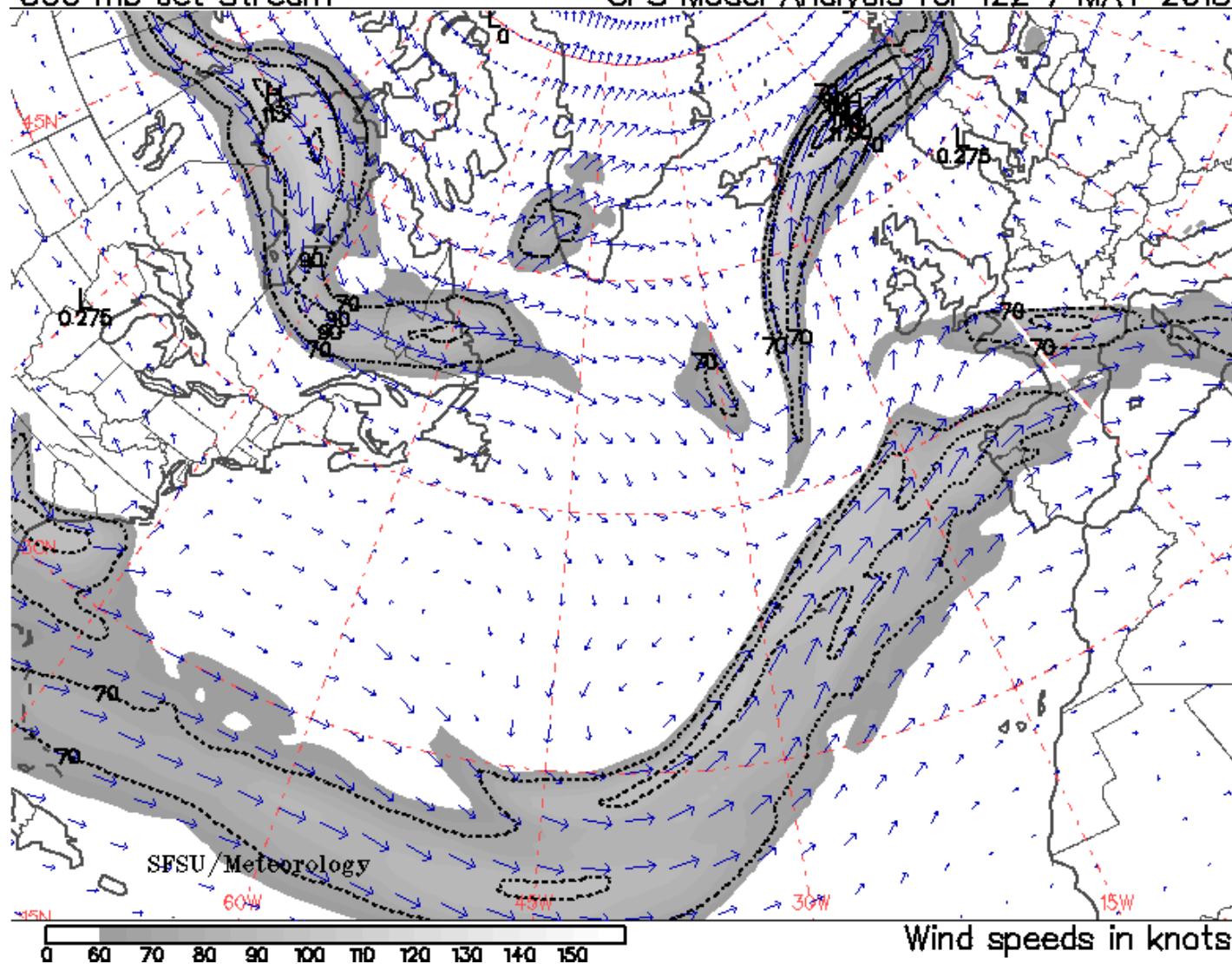
GFS Model Analysis for 12Z 6 MAY 2013





300 mb Jet Stream

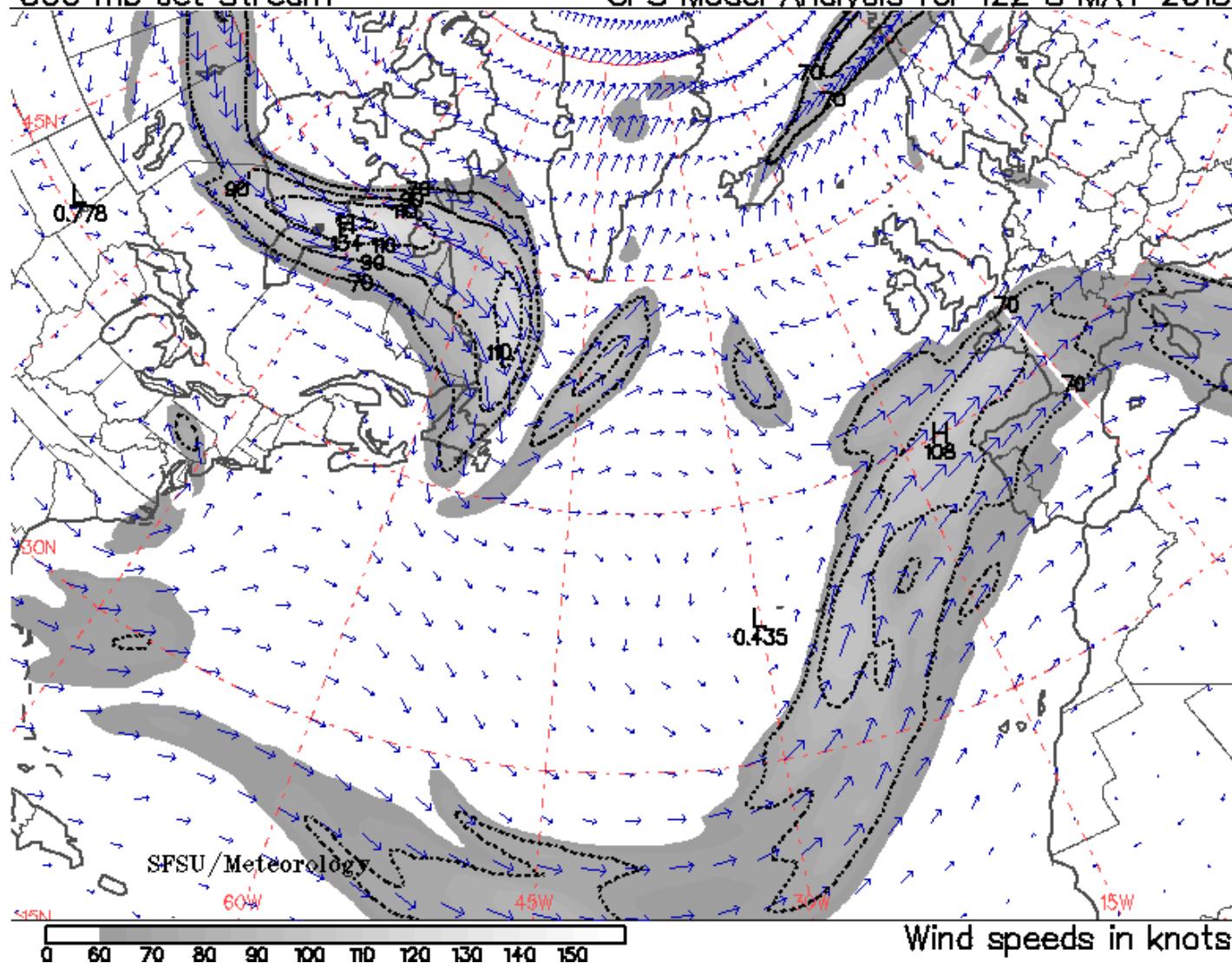
GFS Model Analysis for 12Z 7 MAY 2013





300 mb Jet Stream

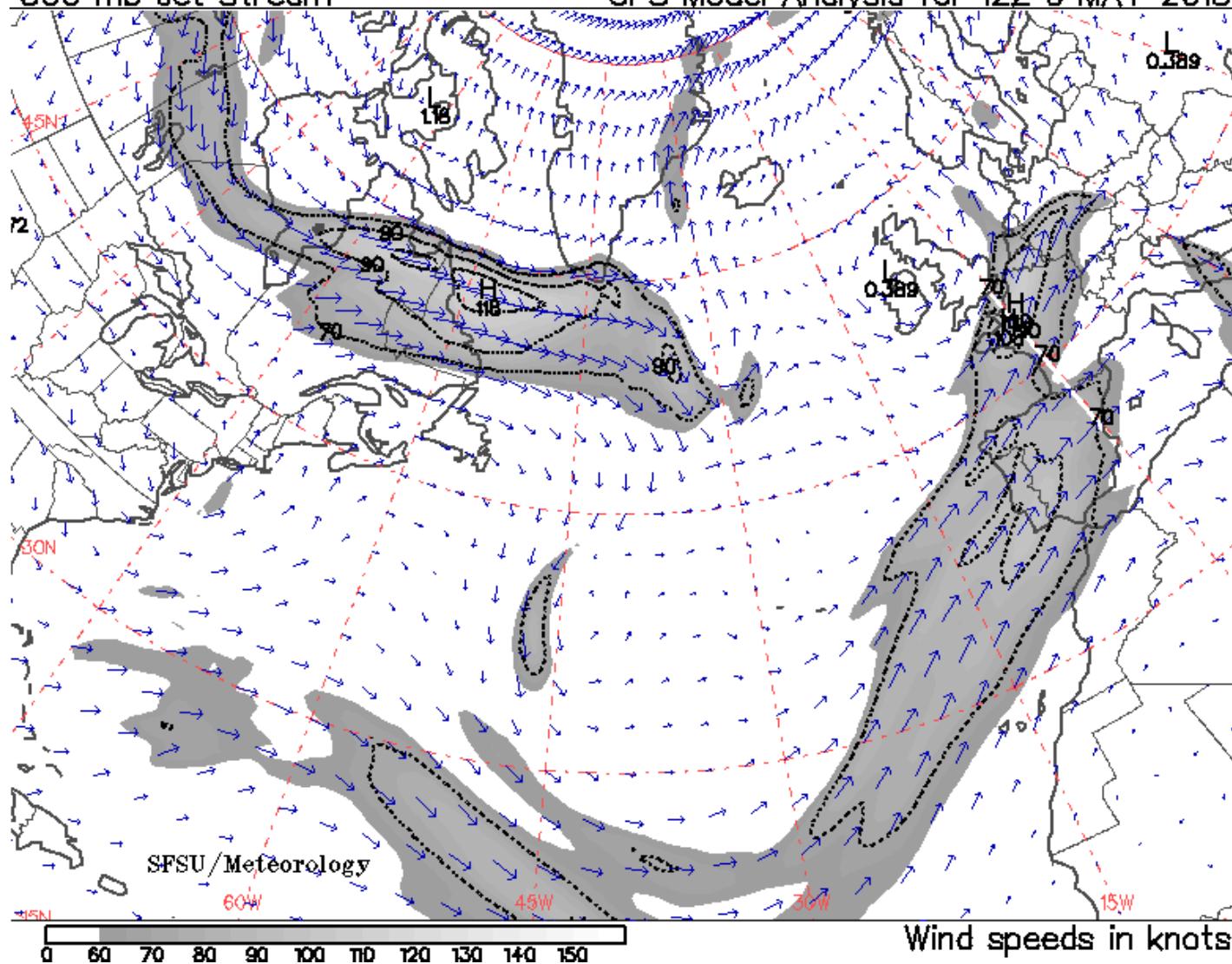
GFS Model Analysis for 12Z 8 MAY 2013





300 mb Jet Stream

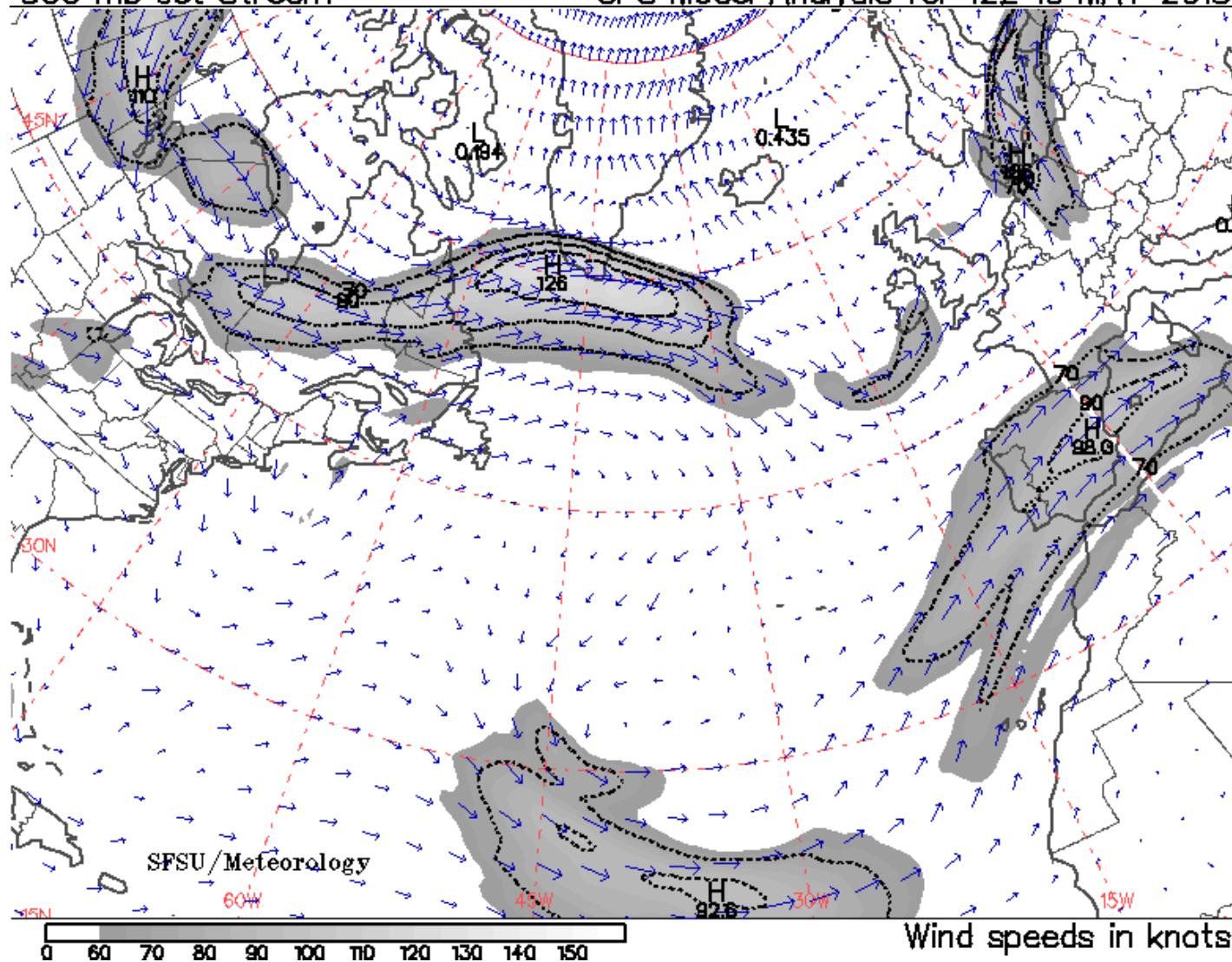
GFS Model Analysis for 12Z 9 MAY 2013





300 mb Jet Stream

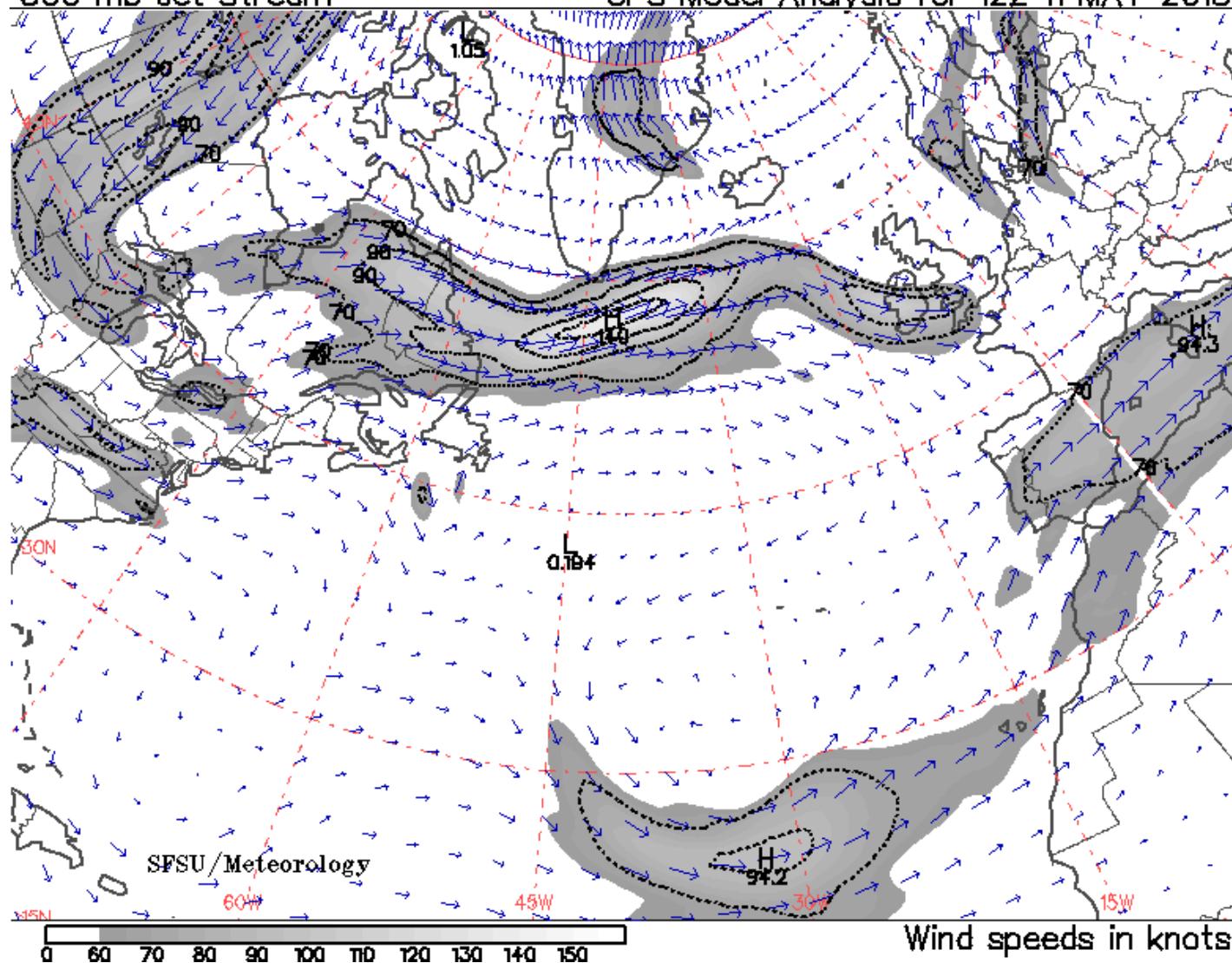
GFS Model Analysis for 12Z 10 MAY 2013





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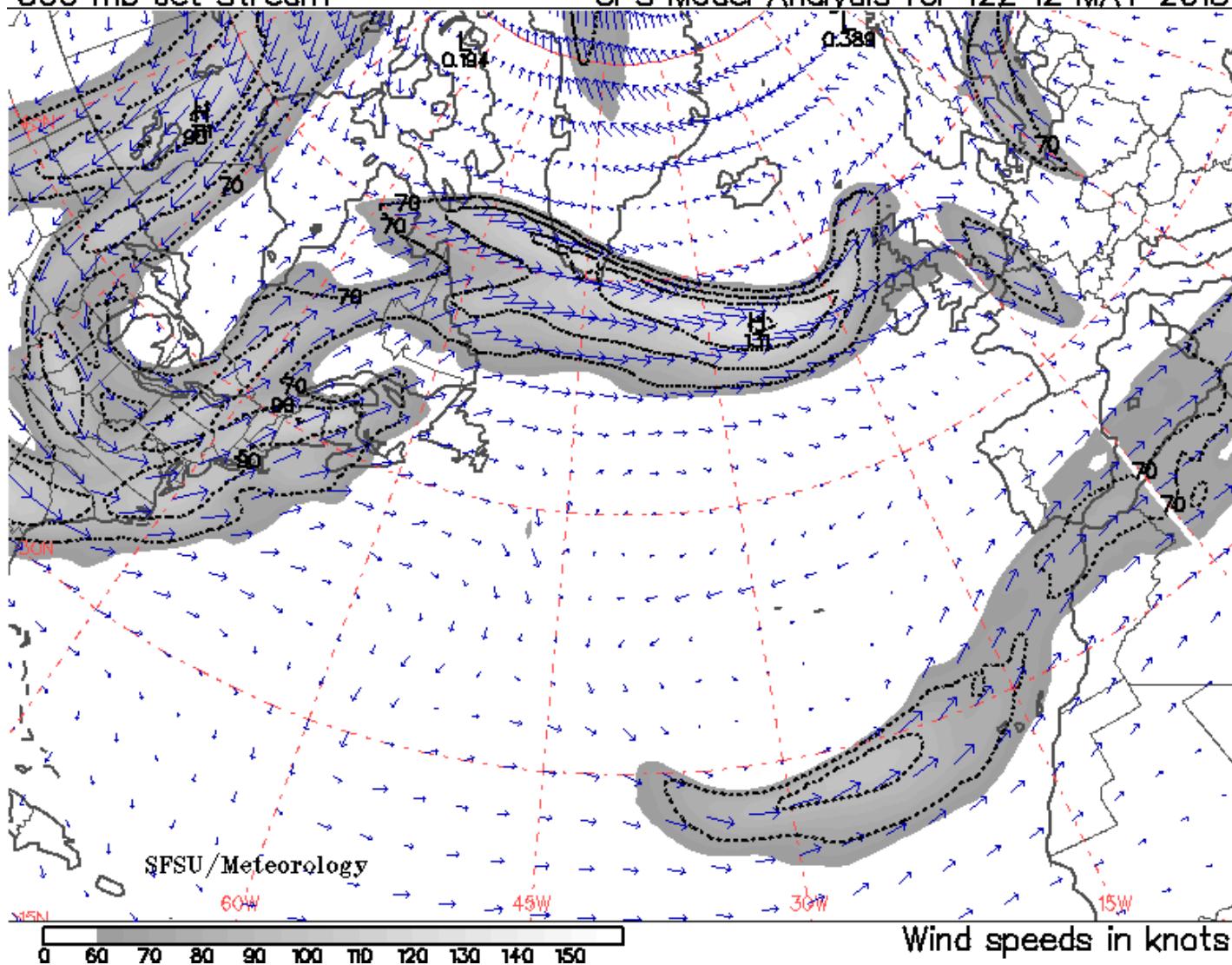
GFS Model Analysis for 12Z 11 MAY 2013





300 mb Jet Stream

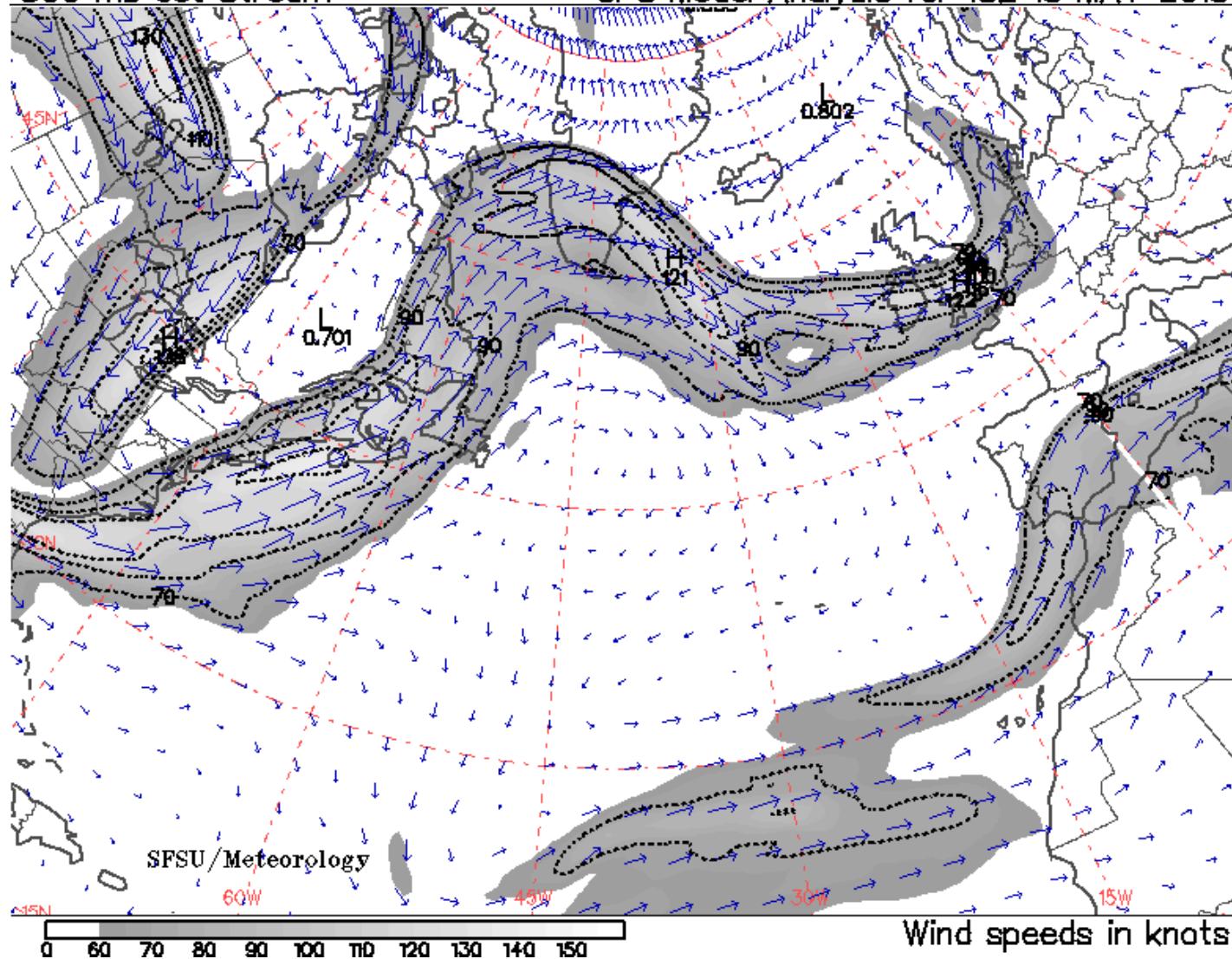
GFS Model Analysis for 12Z 12 MAY 2013





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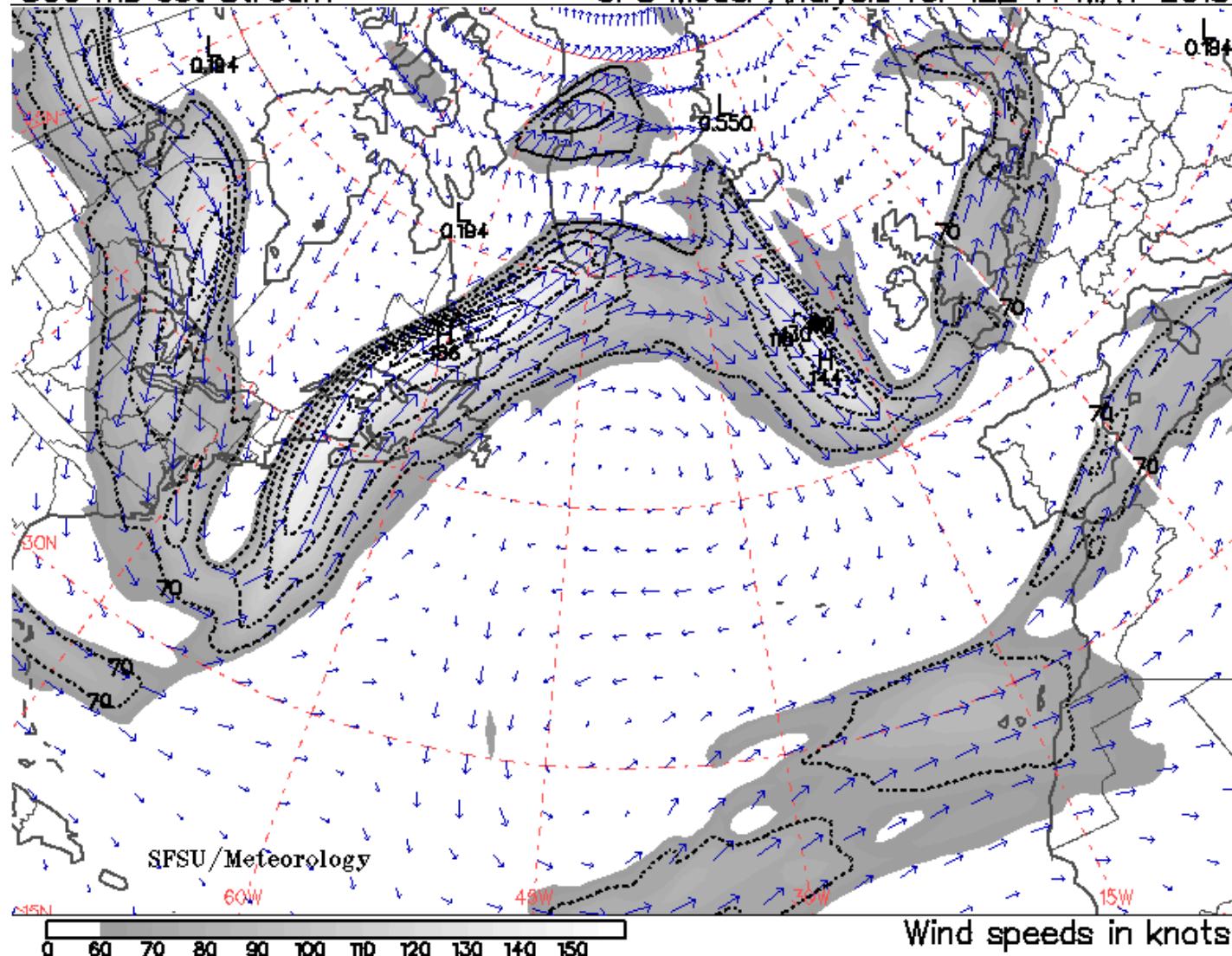
GFS Model Analysis for 18Z 13 MAY 2013





300 mb Jet Stream

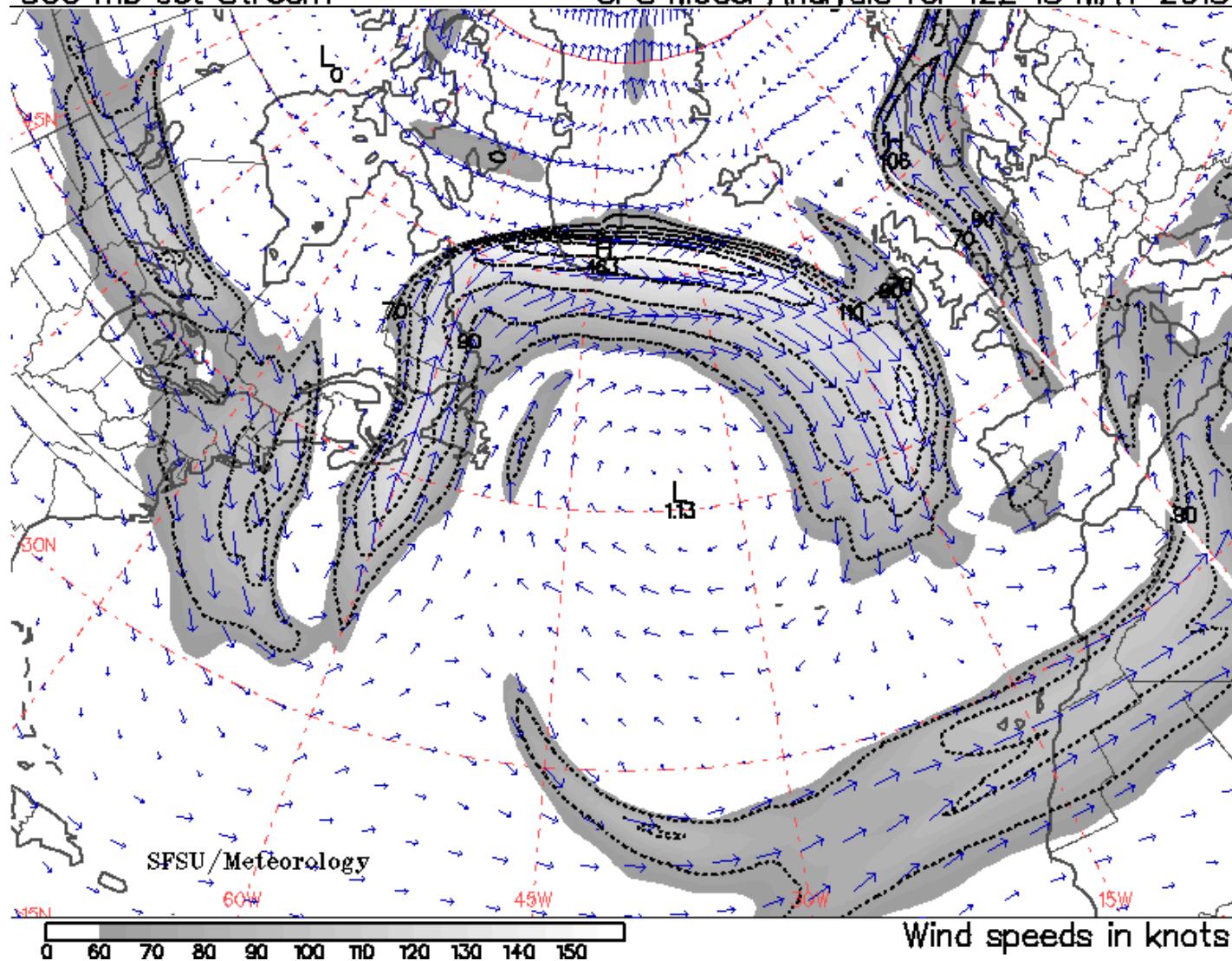
GFS Model Analysis for 12Z 14 MAY 2013





300 mb Jet Stream

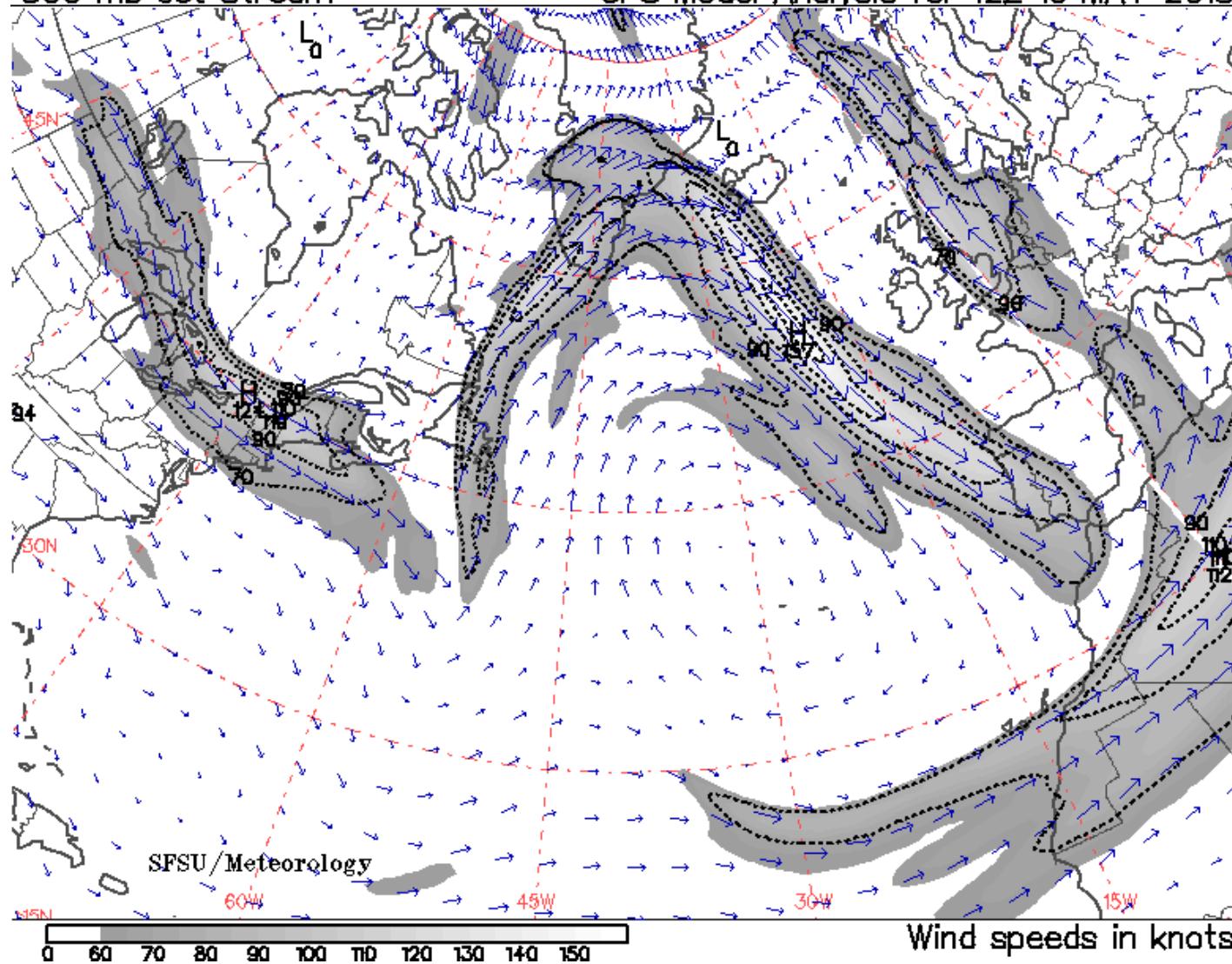
GFS Model Analysis for 12Z 15 MAY 2013





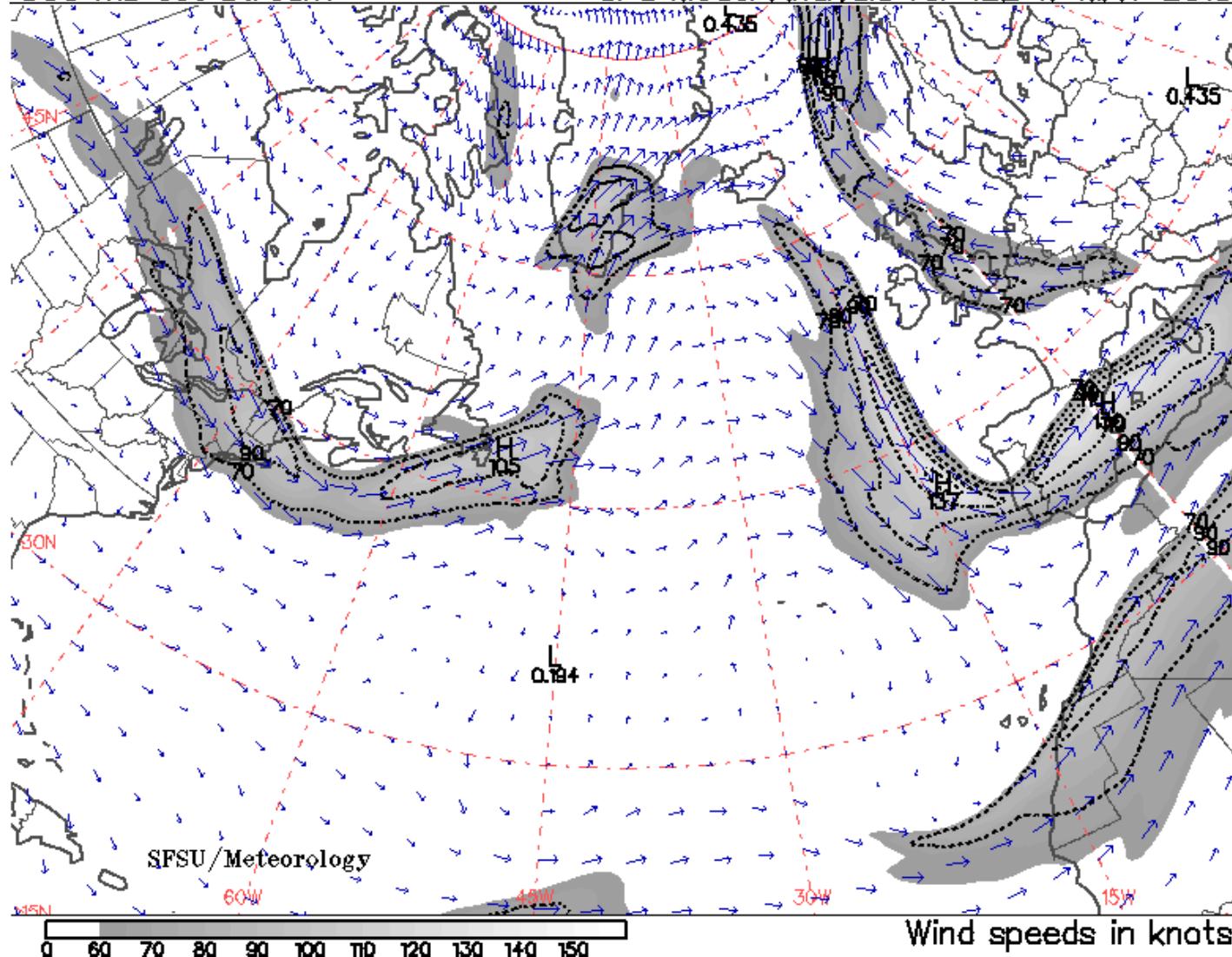
300 mb Jet Stream

GFS Model Analysis for 12Z 16 MAY 2013



300 mb Jet Stream

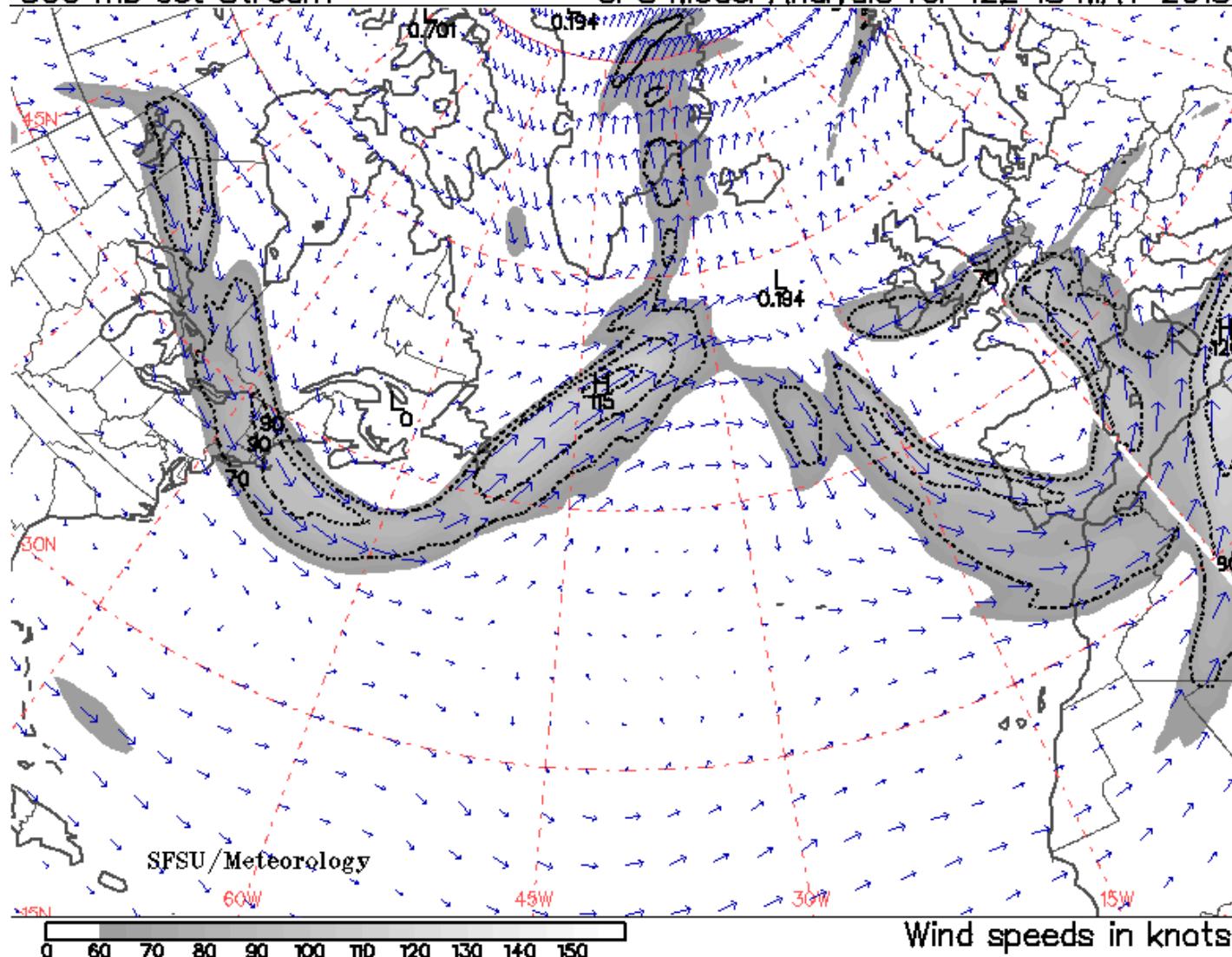
GFS Model Analysis for 12Z 17 MAY 2013





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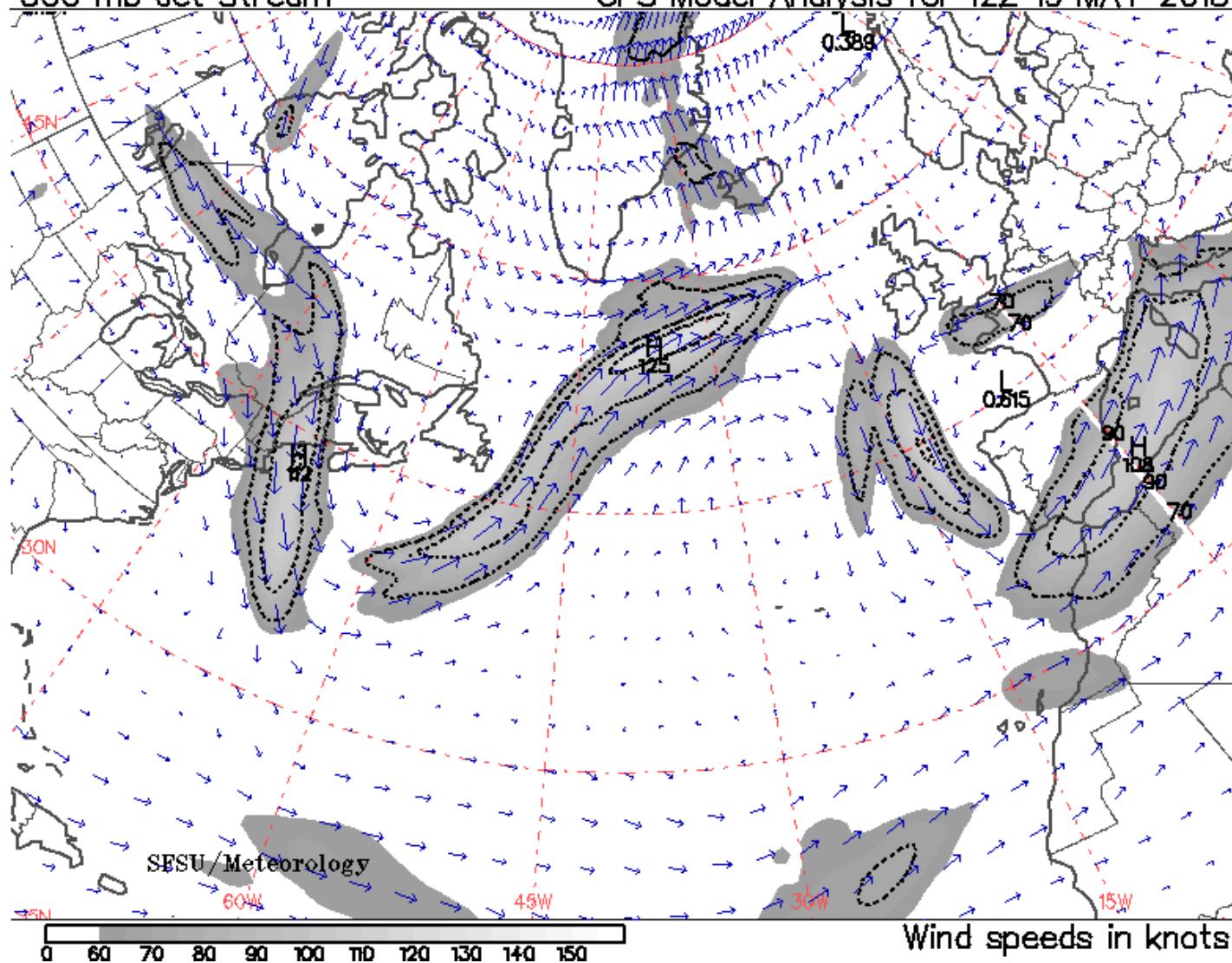
GFS Model Analysis for 12Z 18 MAY 2013





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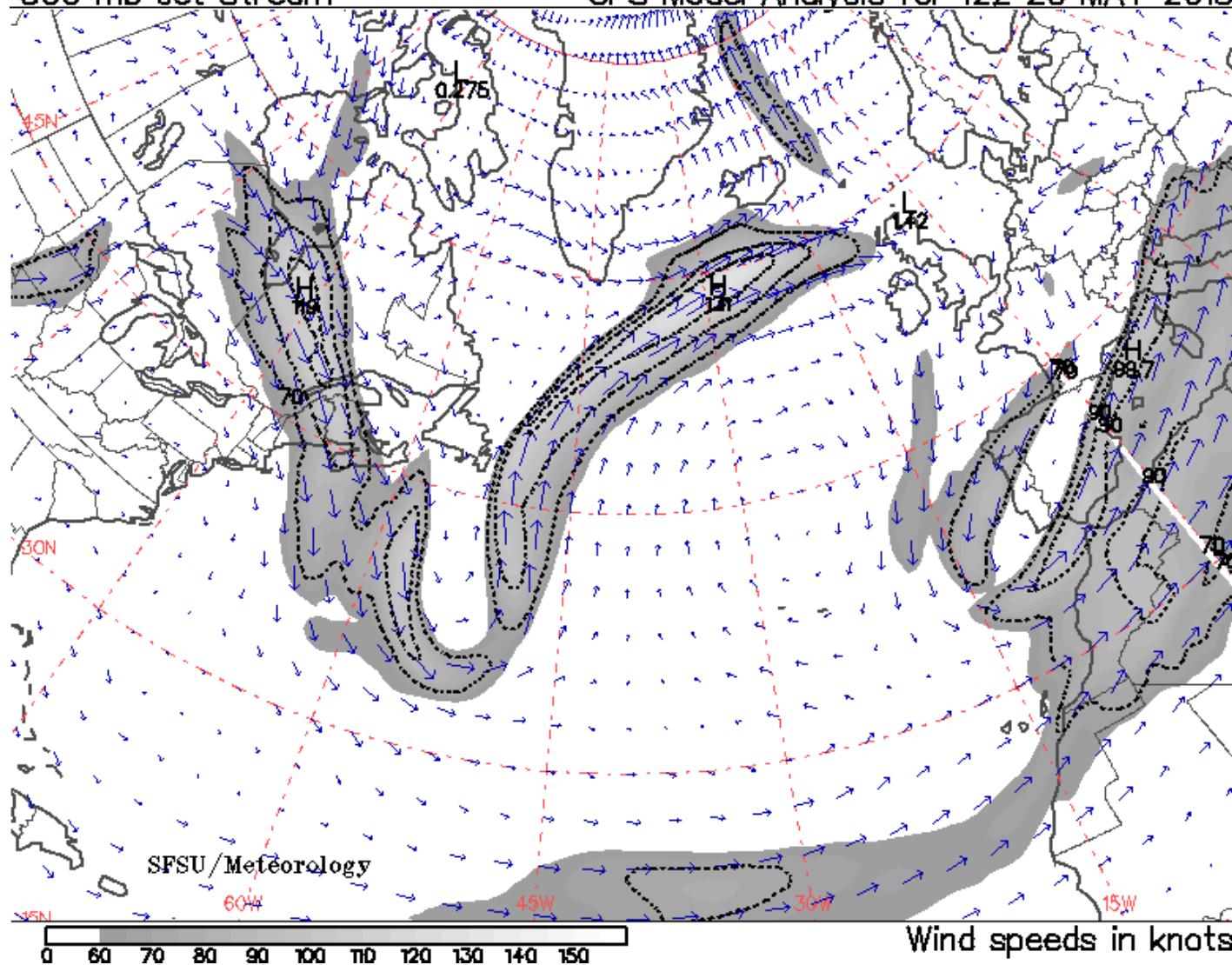
GFS Model Analysis for 12Z 19 MAY 2013





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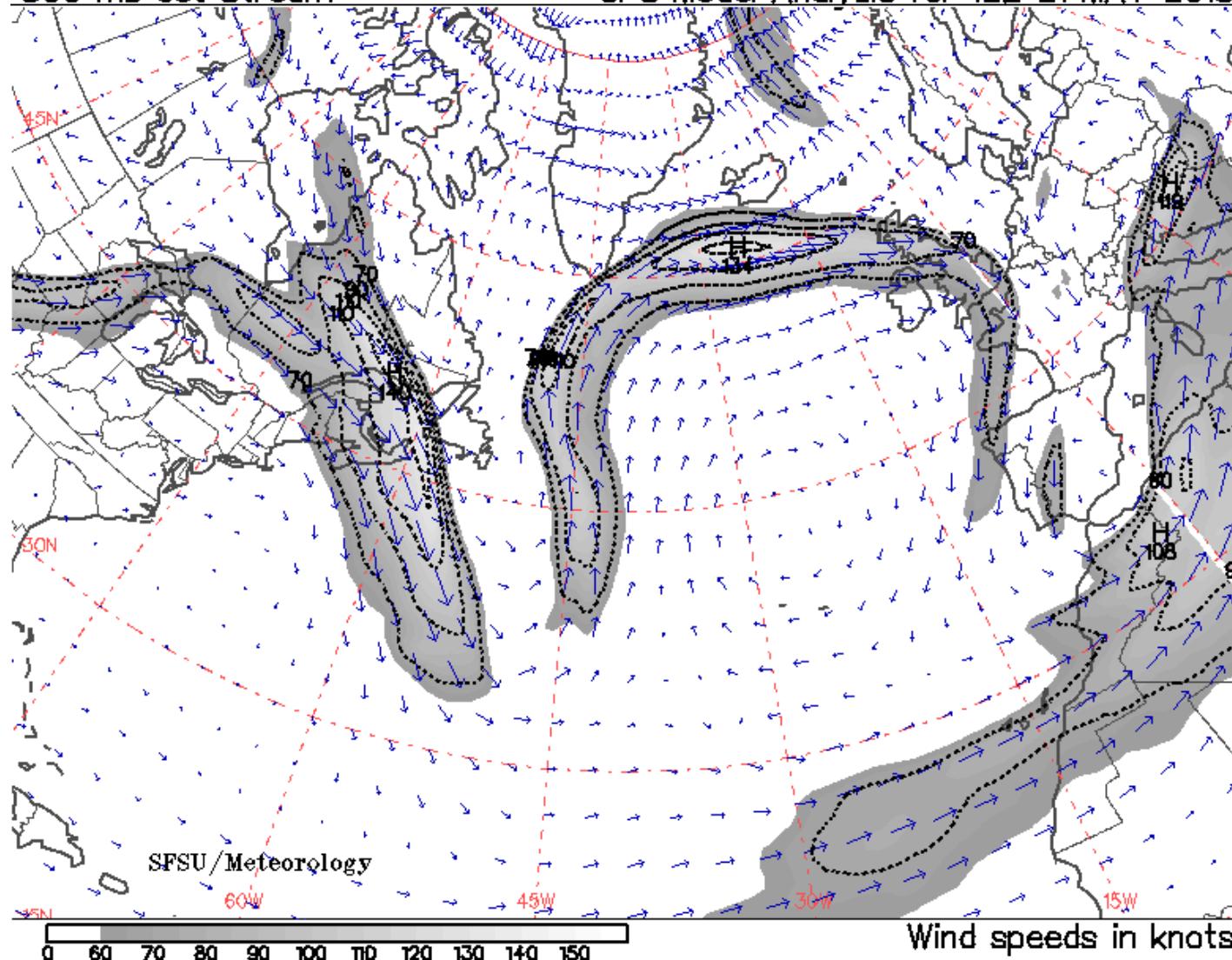
GFS Model Analysis for 12Z 20 MAY 2013





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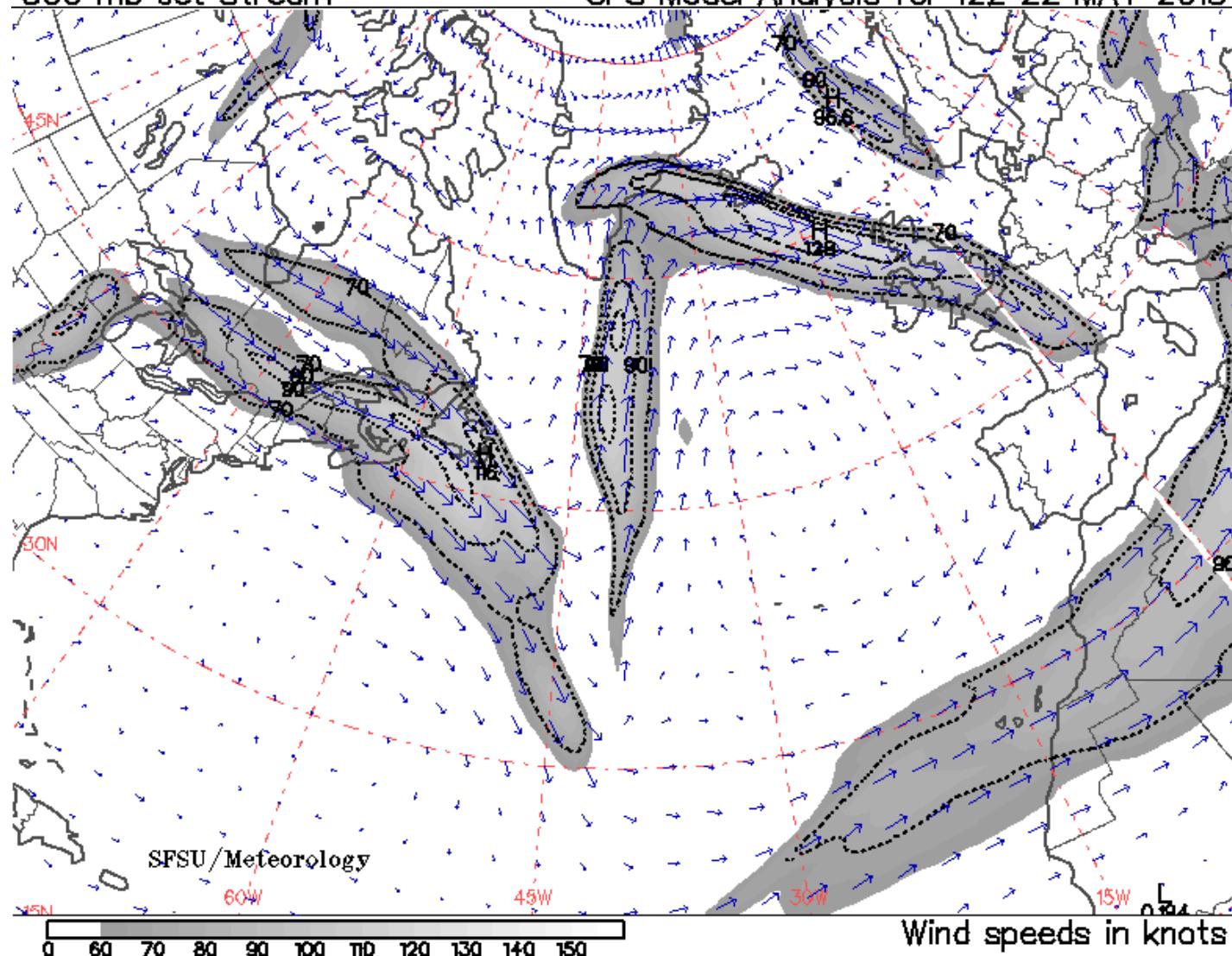
GFS Model Analysis for 12Z 21 MAY 2013





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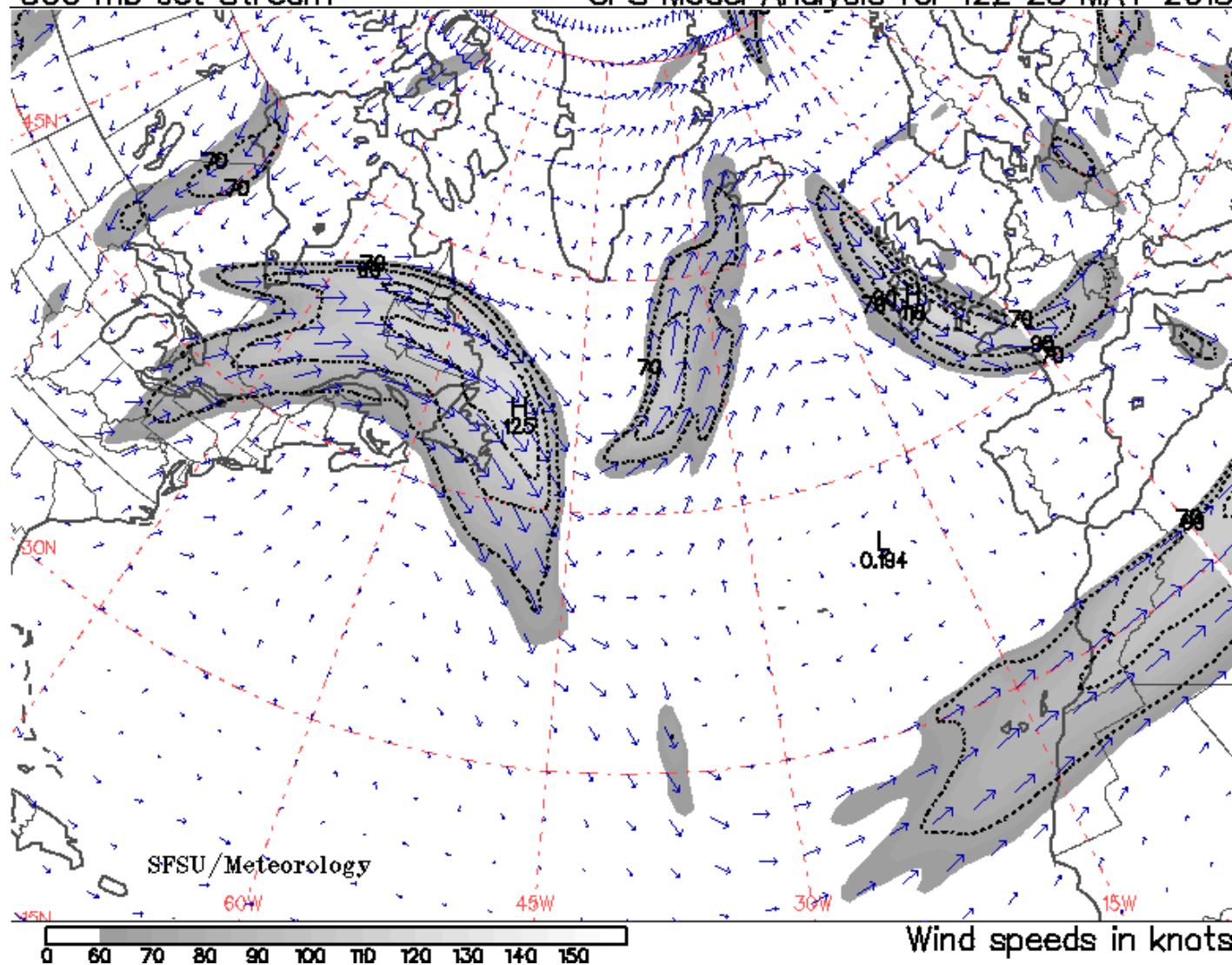
GFS Model Analysis for 12Z 22 MAY 2013





300 mb Jet Stream

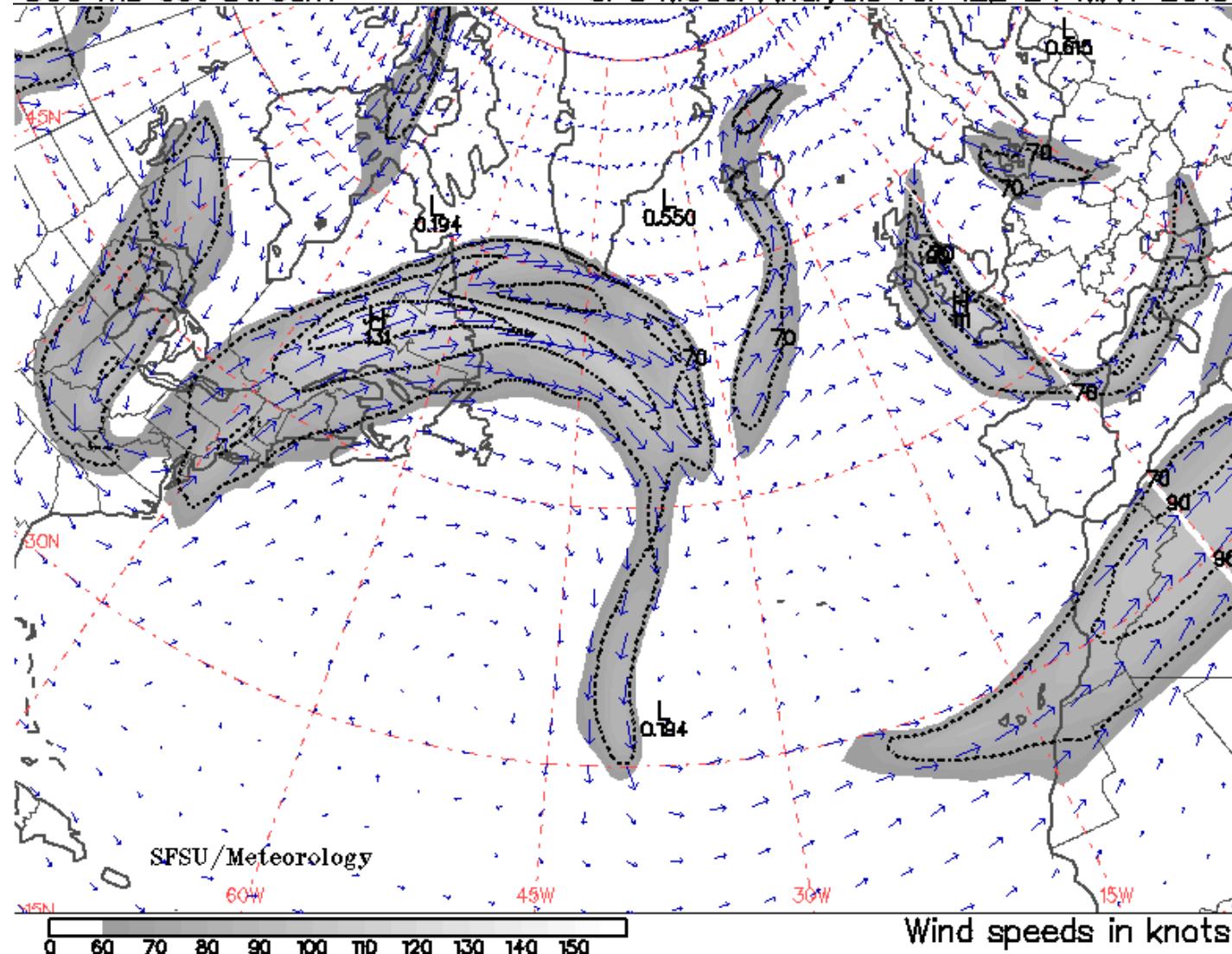
GFS Model Analysis for 12Z 23 MAY 2013





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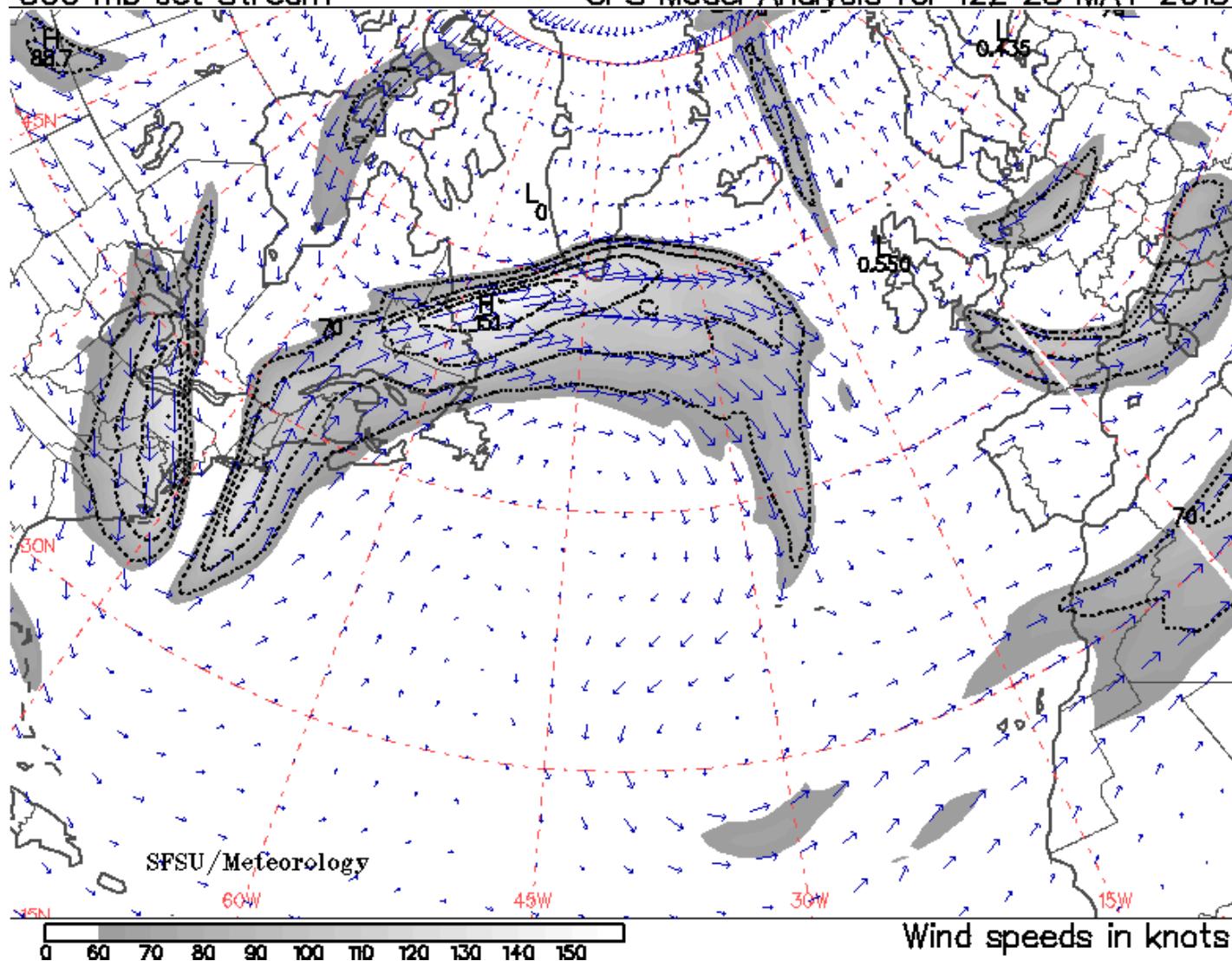
GFS Model Analysis for 12Z 24 MAY 2013





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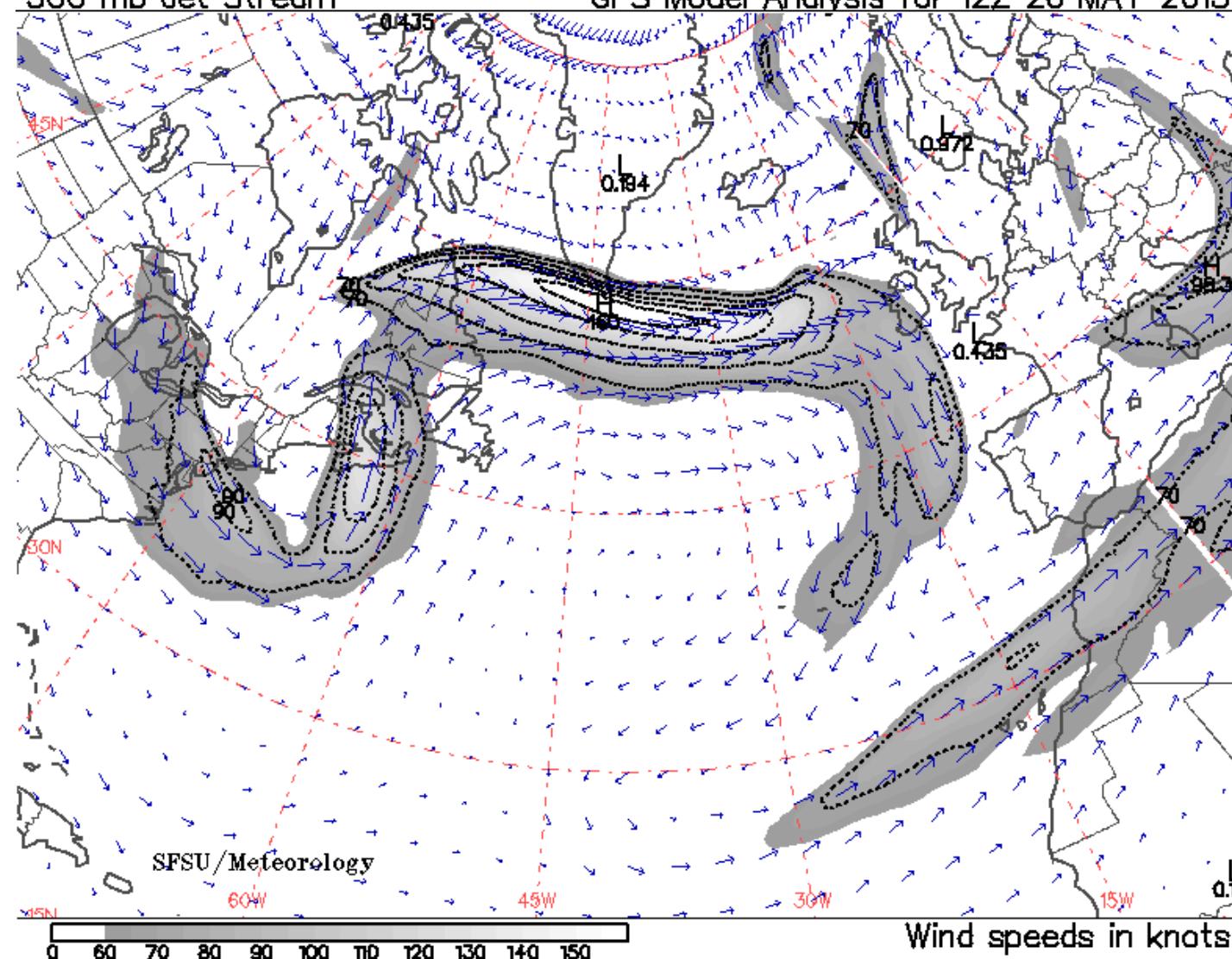
GFS Model Analysis for 12Z 25 MAY 2013





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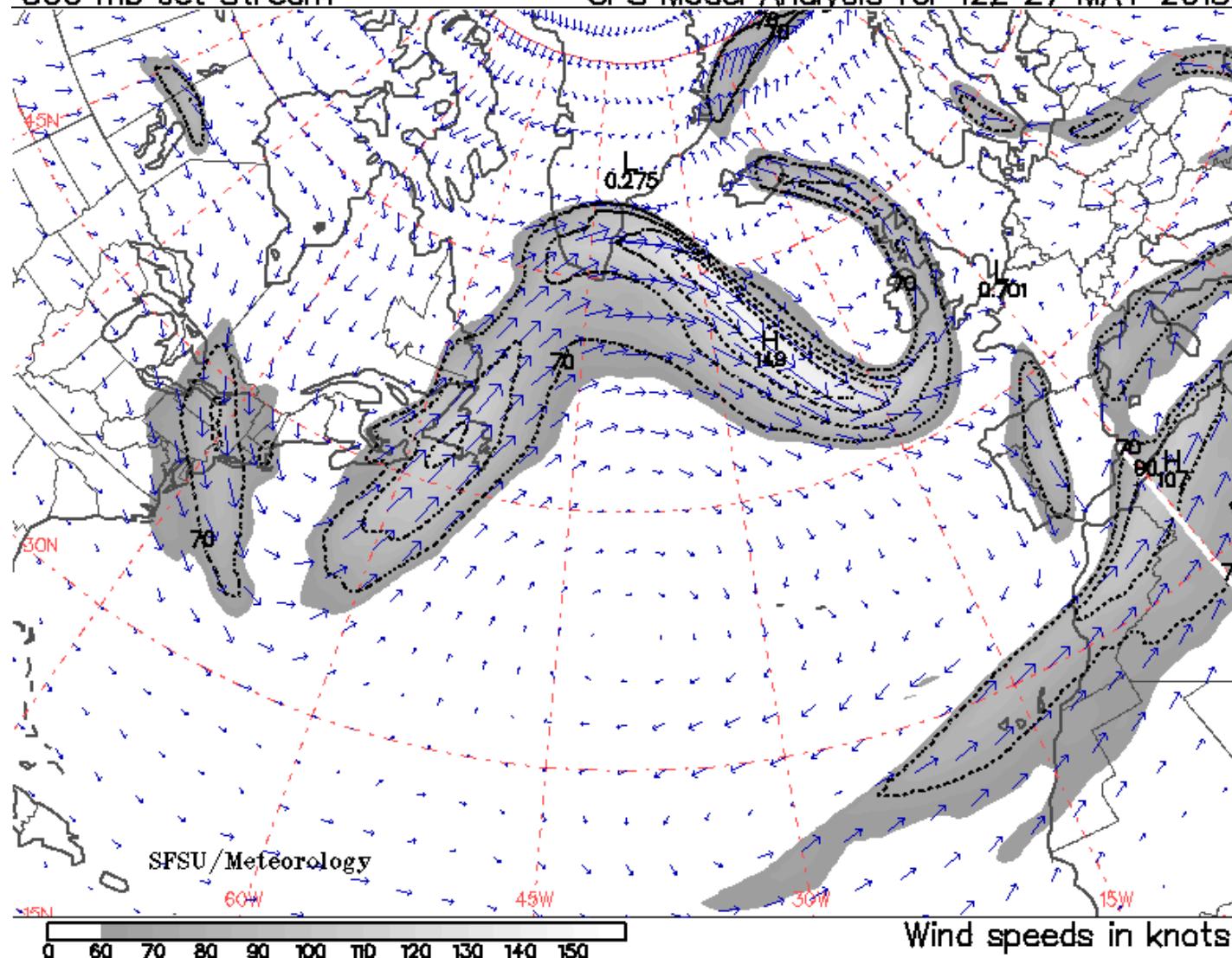
GFS Model Analysis for 12Z 26 MAY 2013





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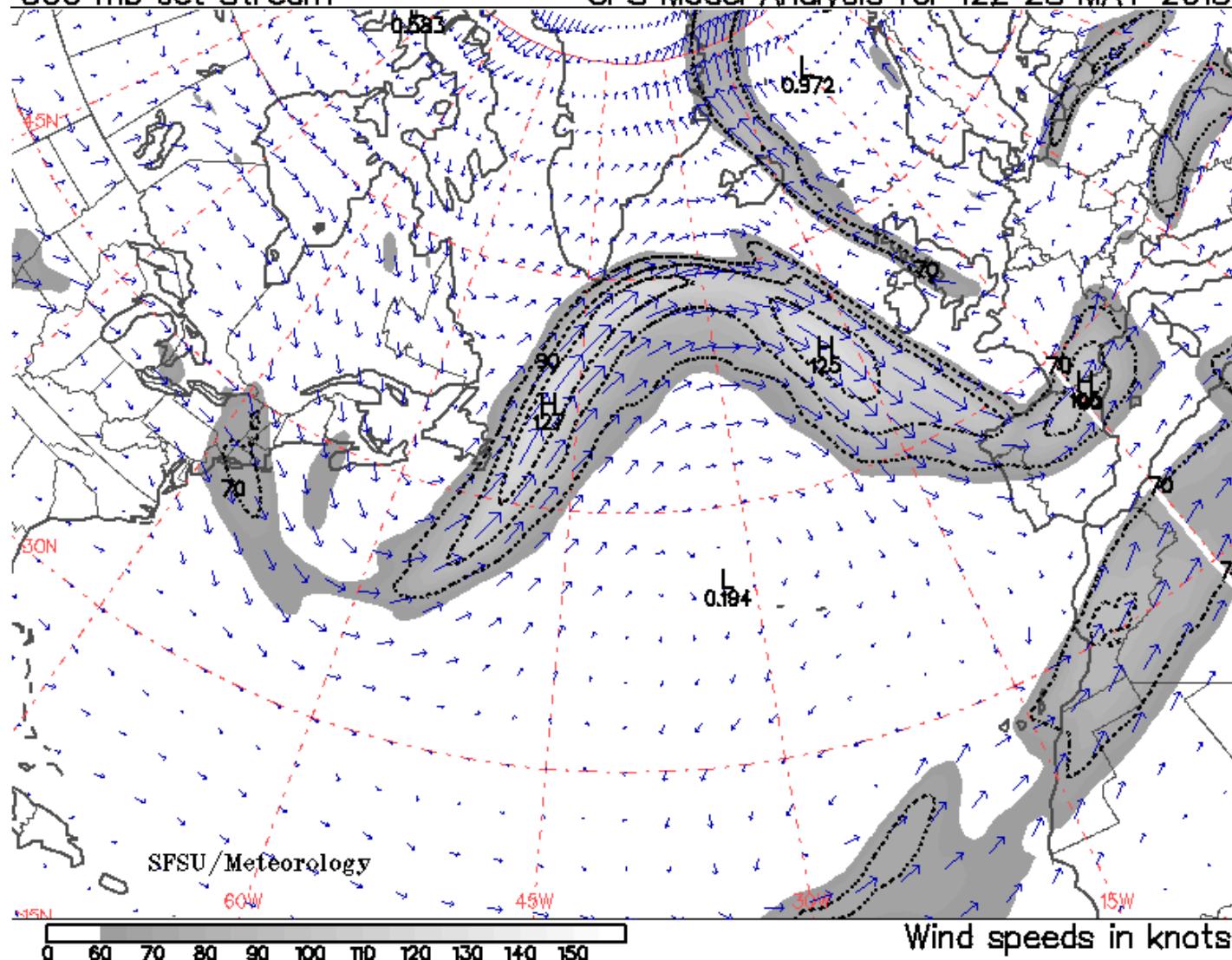
GFS Model Analysis for 12Z 27 MAY 2013





300 mb Jet Stream

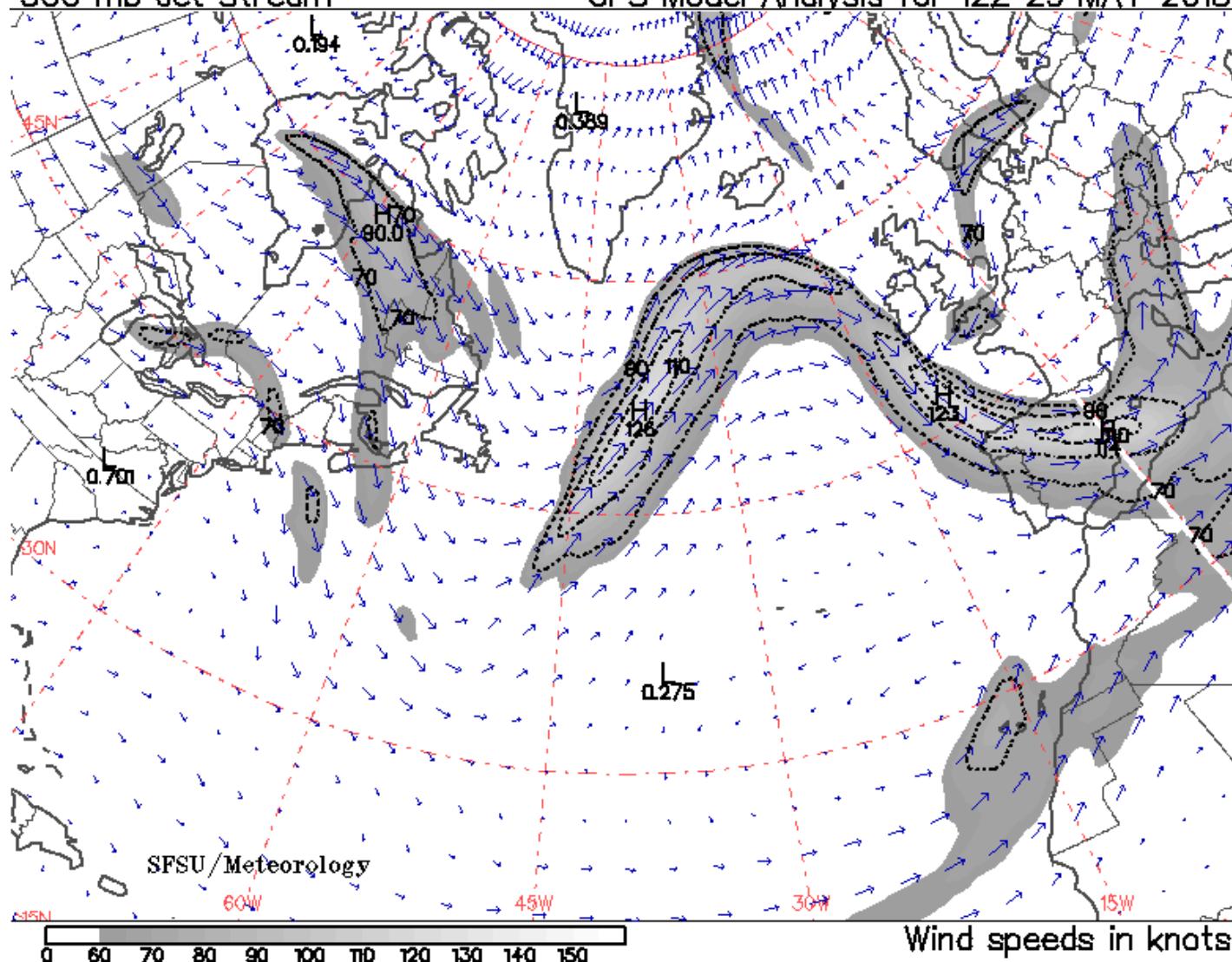
GFS Model Analysis for 12Z 28 MAY 2013

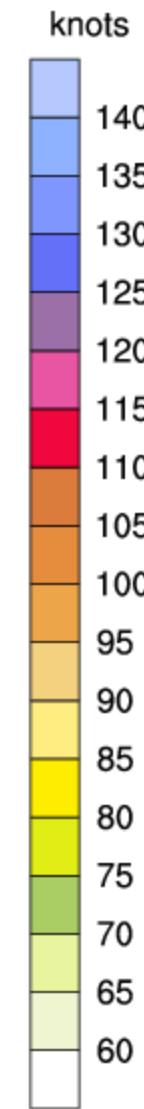
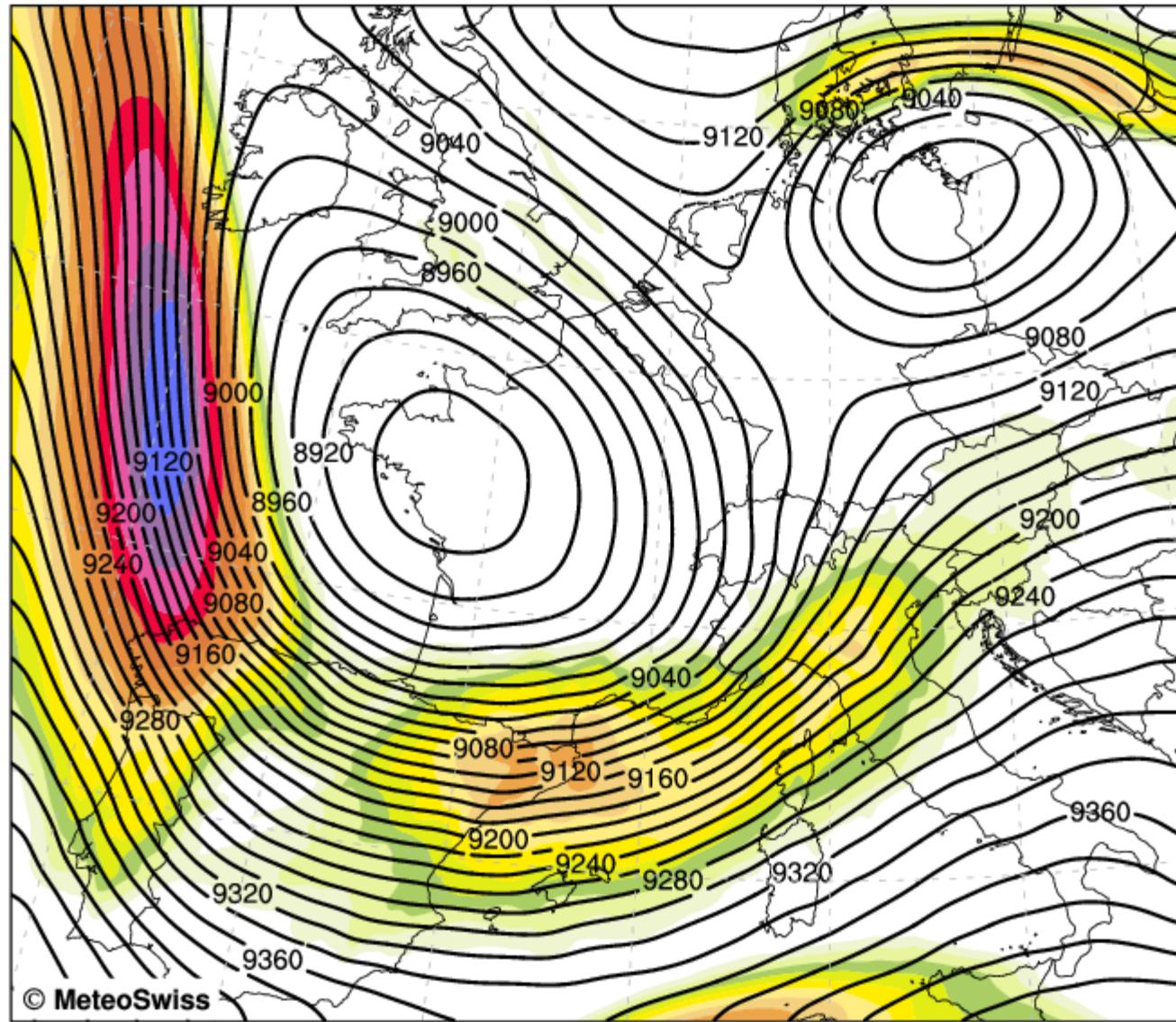




300 mb Jet Stream

GFS Model Analysis for 12Z 29 MAY 2013





wind speed [knots], level = 300 hPa
Geopotential [gpm], level = 300 hPa

Mean: 53.4 Max: 99.3 [knots]
Mean: 9158.3 gpm



Riporto qui un commento alla situazione meteo di questa primavera tratto da "Corriere della Sera" del 25 Maggio 2013

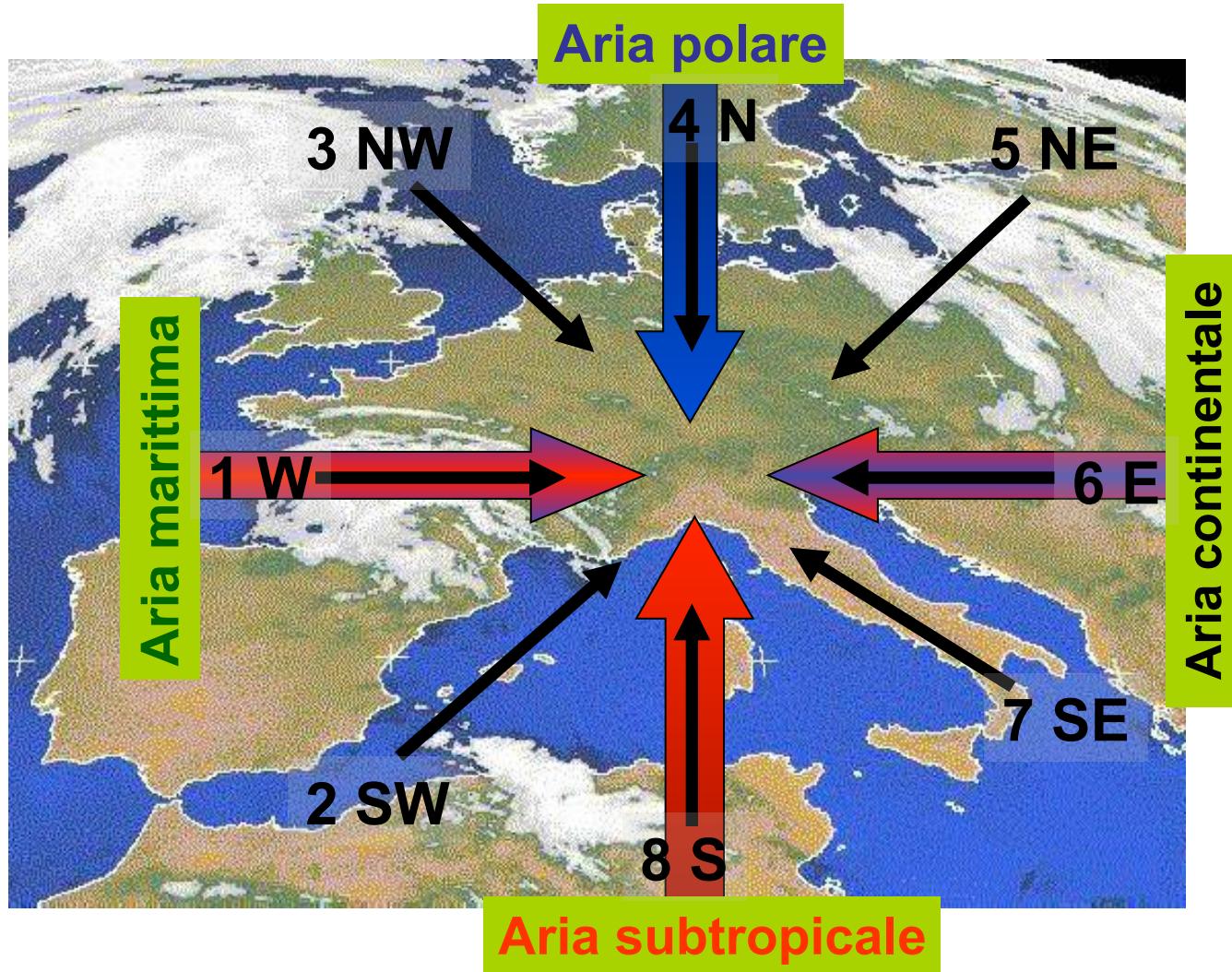
Intervista a Massimiliano Pasqui – Istituto di biometeorologia del CNR

“... Il colpevole è ben identificato: è l'anticiclone delle Azzorre rimasto bloccato sull'Atlantico. Ma non solo. Si è pure deformato diventando da circolare a una ellisse allungata che lambisce latitudini più elevate del solito: invece che arrivare sui 30-40 gradi Nord, giunge addirittura a 50-60 gradi. E allora accade che le correnti che arrivano da ovest quando lo incontrano si separino, aggirandolo, e percorrendo grandi spazi in poco tempo scendendo dal Nord ci portino il freddo e tutto ciò che ne consegue.

Ma perché si è deformato ad ellisse l'anticiclone? Le cause sono diverse. Una riguarda il vortice polare che dopo averci dato grattacapi nei mesi scorsi estendendosi troppo a Sud ora ritirandosi nella sua area naturale sul Polo Nord ha favorito l'allungarsi verso l'alto dell'ellisse. L'altro elemento intervenuto influenzando la situazione è il monsone indiano che in questi giorni è entrato in attività creando un contrasto atmosferico efficace per danneggiare la primavera.

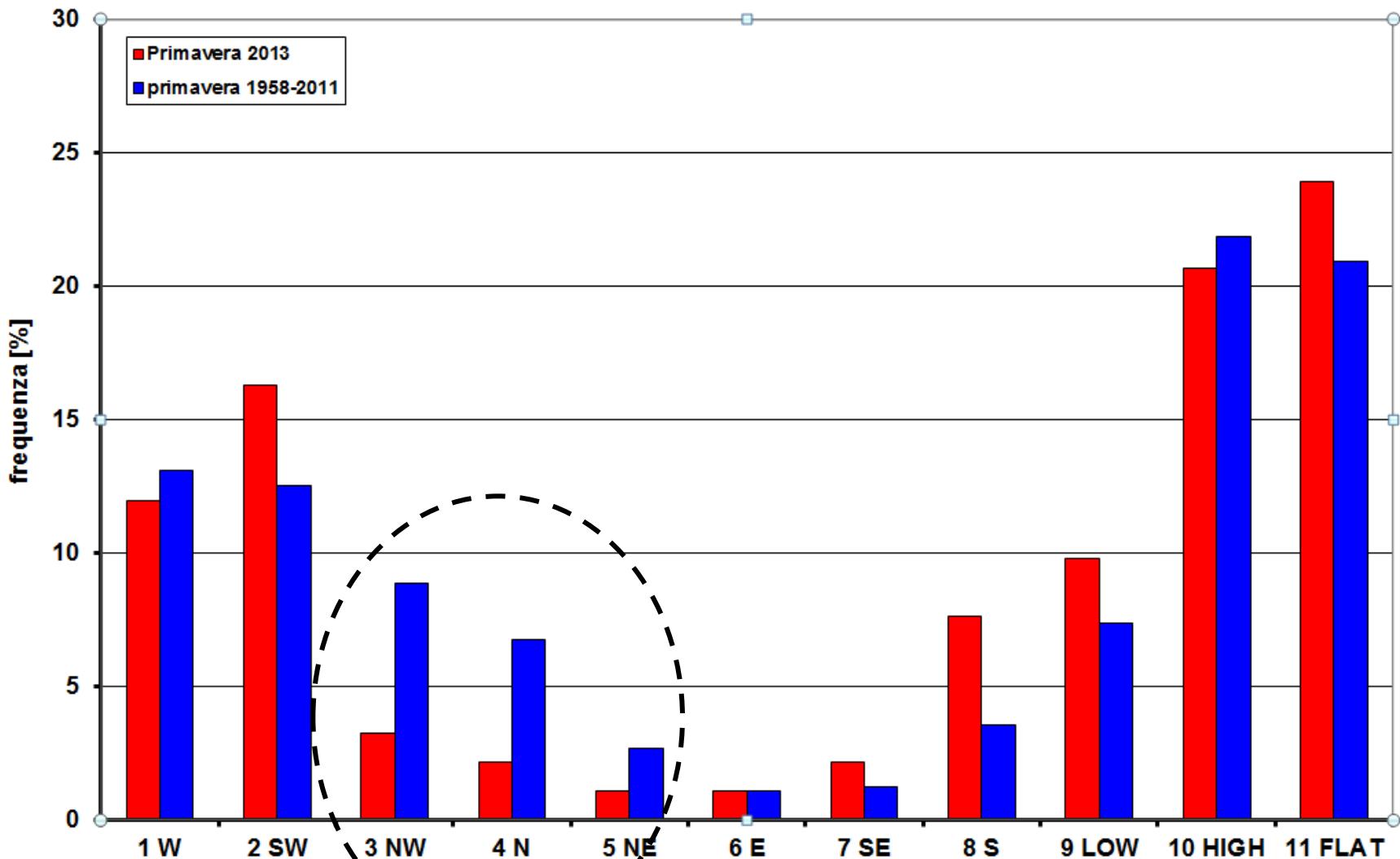


Massa d'aria diverse, tempo diverso, situazioni diverse



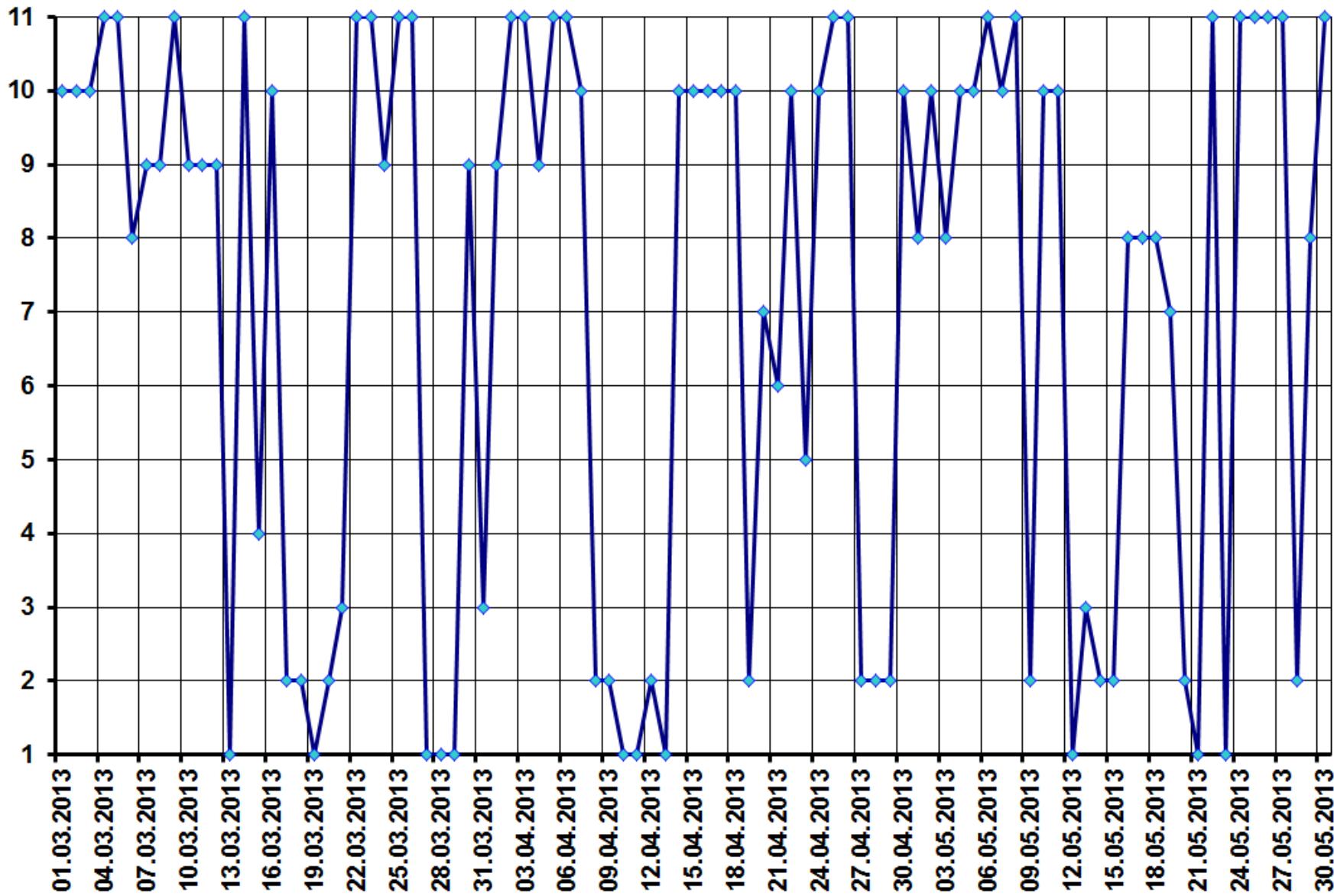


La distribuzione delle situazioni





Sequenza delle situazioni





L. Silvanti