MODES Workshop – August 26-28, 2015
NCAR, Mesa Laboratory, Main Seminar Room, Boulder, Colorado
Agenda

Wednesday, 26 August 2015

8:30 Shuttle departure from Millennium hotel to NCAR Mesa Lab

9:15 Welcome and Opening (A. Kasahara and J. Tribbia)

General session on normal modes
Chair: J. Tribbia

9:30 *J.P.Boyd:* Hough Modes for the Full range of Lamb's parameter: mode tracing, Hermite and spherical harmonic perturbation series and desingularaizing critical latitude

10:05: *R. Dickinson*: Generalizing the concepts of normal mode theory for diagnosis of climate variability

10:40 Break

11:10 *R. Errico*: Towards an understanding of atmospheric balance

11:45 *B. Machenhauer, I. Kirchner and S. Yong*: On the application of normal-mode expansion of reanalysis data in the diagnosis of systematic initial tendency errors

12:20 Lunch

Session on normal modes and numerical weather prediction
Chair: H. Tanaka

13:45 *E. Kallen and L. Magnusson*: Effect of tropical analysis uncertainties on midlatitude forecast errors

14:20 N. Gustafsson: Balances and data assimilation - a review

14:55 D. F. Parrish, D.T. Kleist, and C. Thomas: The tangent linear normal mode constraint in GSI: theory and early tests

15:30 Break

16:00 *D.T. Kleist, D. Parrish and C. Thomas*: The tangent linear normal mode constraint in GSI: application in the NCEP GFS/GDAS hybrid EnVar system and future developments

16:35 Advertising of the posters (5 min per poster, list of posters included below)

17:15 Workshop Banquet Reception - Cafe
17:45 Workshop Banquet Dinner - Cafe

20:00 Shuttle departure from NCAR Mesa Lab to Millennium hotel

Thursday, 27 August 2015

8:30 Shuttle departure from Millennium hotel to NCAR Mesa Lab

General session on normal mode observations and dynamics
Chair: E. Kallen

9:15 *R.A. Madden*: Observations of free, Rossby waves in the atmosphere

9:50 *R. R. Garcia*: Normal modes in the middle atmosphere observed by SABER

10:25 Break and Group Photo

10:55 *C. Raupp:* Linear and weakly nonlinear energetics of global nonhydrostatic normal modes

11:35 *H.L. Tanaka*: 3D spectral energetics analysis and Rossby wave saturation theory

12:10 *N. Žagar*: Modal view of atmospheric predictability

12:45 Lunch

Session on Tropical modes and dynamics
Chair: G. Kiladis

13:45 *J.-I. Yano*: The tropical MJO as an asymptotically nondivergent nonlinear Rossby wave

14:25 *C.A.F. Marques and J. M. Castanheira*: Free and convectively coupled equatorial -waves diagnosis using 3-D Normal Modes

14:55 J. Alexander, D. Ortland and J.-E. Kim: Tropical wave Eliassen-Palm flux in satellite observations and analyses

15:30 Break and Poster Session

Session on the MODES software

16:00 *N. Žagar, A. Kasahara, K. Terasaki, J. Tribbia and H. Tanaka*: MODES software and its application to the ERA Interim reanalyses

16:30 *K. Terasaki*: Some aspects of the computation of the 3D normal-mode functions

17:00 Shuttle departure from NCAR Mesa Lab to Millennium hotel

17:00-18:00 MODES software tutorial (optional)

Friday, 28 August 2015

8:30 Shuttle departure from Millennium hotel to NCAR Mesa Lab

General session on atmospheric modes of variability
Chair: J. Alexander

09:15 *A. Gritsun*: Unstable periodic orbits and normal modes

9:40 *C. Franzke*: Persistent regime modes of mid-latitude variability and scale interaction

10:15 Break

10:45 *G. Branstator and H. Teng*: Prominent tropospheric waveguide teleconnection patterns in winter and summer

11:15 *Q. Ding*: A global view of large-scale atmospheric circulation modes over the last 60 years

11:50 *H. Wang*: Short-term tidal variability during sudden stratospheric warming

12:20 Lunch

General session on atmospheric modes of variability
Chair: R. Garcia

13:30 *G.N. Kiladis, R. Madden, J. Dias, J. Albers, A. Jaramillo and M. Gehne*: Relationship between the 5-day free Rossby mode and extratropical storm tracks

14:05 *M. King, M. Wheeler and T. Lane*: Convective activity associated with the 5-day normal mode Rossby wave in re-analysis and CMIP5 model

14:40 *O. Watt-Meyer*: Applying a standing-travelling wave decomposition to the persistent ridge-trough over North America during winter 2013-2014

15:15 Workshop Closure

15:30 Shuttle departure from NCAR Mesa Lab to Millennium hotel

16:00-18:00 Continuation of the MODES software tutorial: Application to the CMIP5 climate models (optional)

List of Posters

M. Blaauw and N. Žagar: The seasonal cycle of Kelvin waves in the ECMWF analyses

G. Kiladis, M. Gehne and J. Dias: Two scales of mixed Rossby-gravity (MRG) and Kelvin waves in the lower stratosphere

K. Kosovelj and N. Žagar: Validation of a climate model by using MODES

Yamahami and H.L. Tanaka: Analysis of an unstable solution with MJO structure using three-dimensional spectral linear baroclinic model

N. Žagar, M. Blaauw and B. Jesenko: Real-time MODES application to the operational medium-range ECMWF forecasts