CPTEC
Centro de Previsão de Tempo e Estudos Climáticos

The Use of Geostationary Satellite Data for Nowcasting – Part 1

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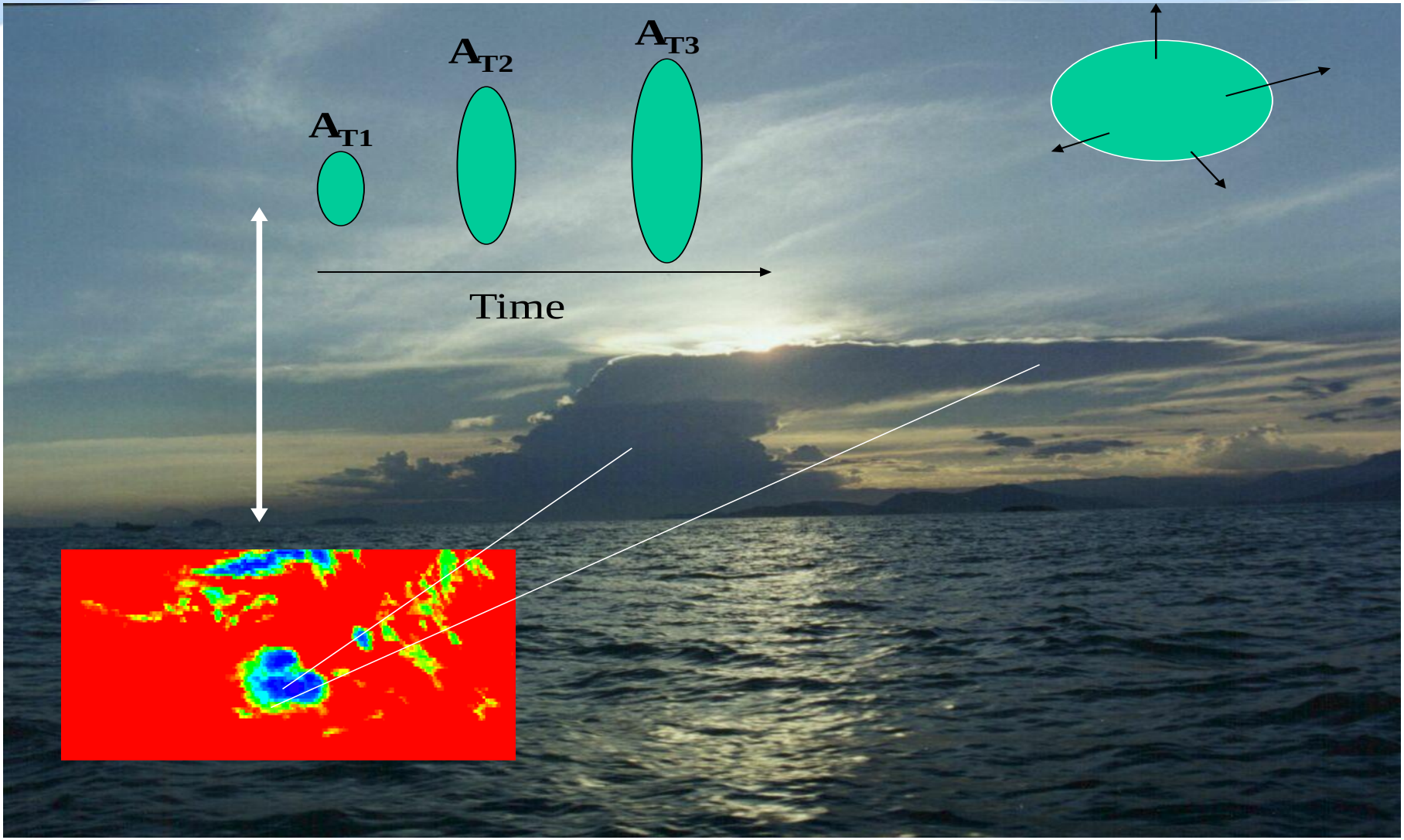
Outline

✓The ForTraCC – Forecasting and Tracking Cloud Clusters.

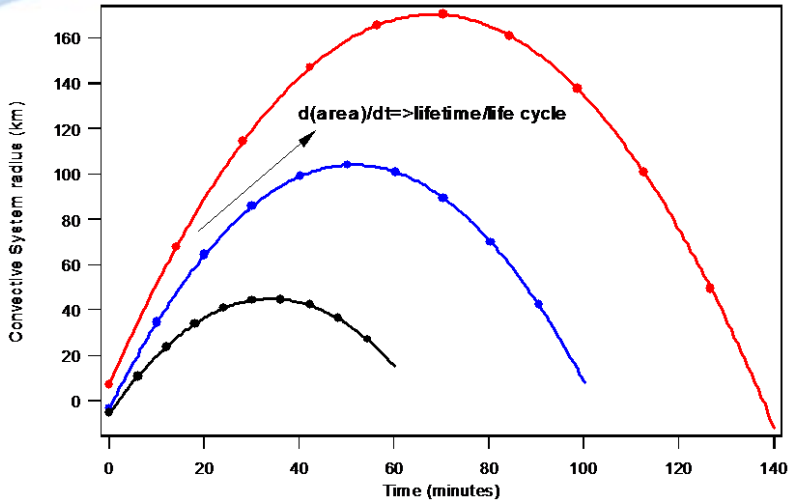
✓The use of Multichannel to improve knowledge about MCS structure

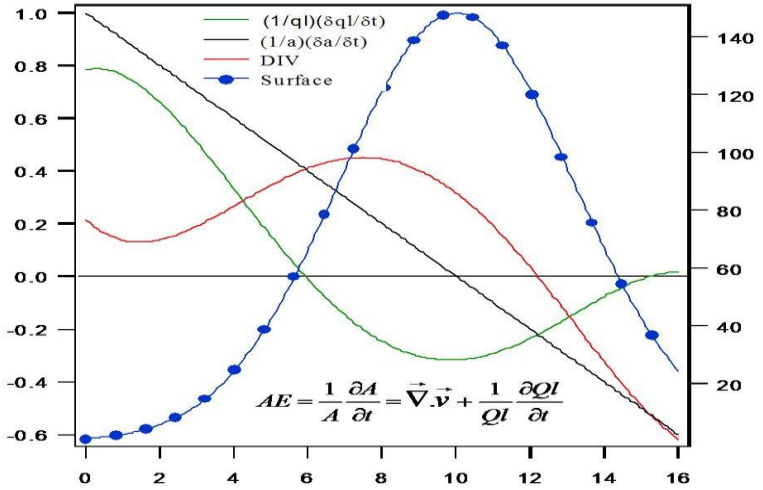
✓The Detection of MCS Lightning Activities

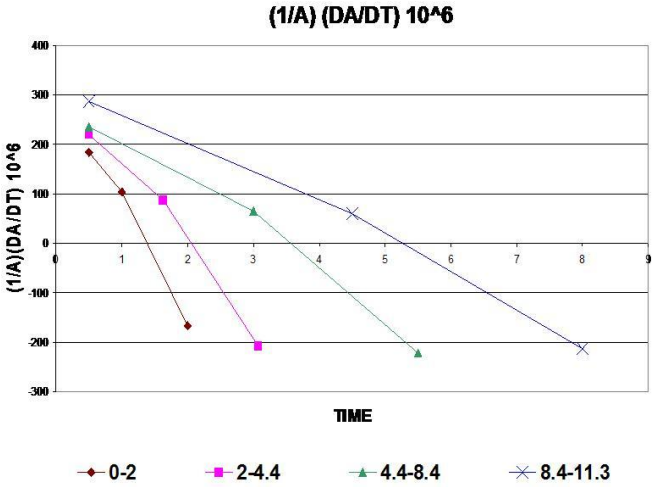
The ForTraCC



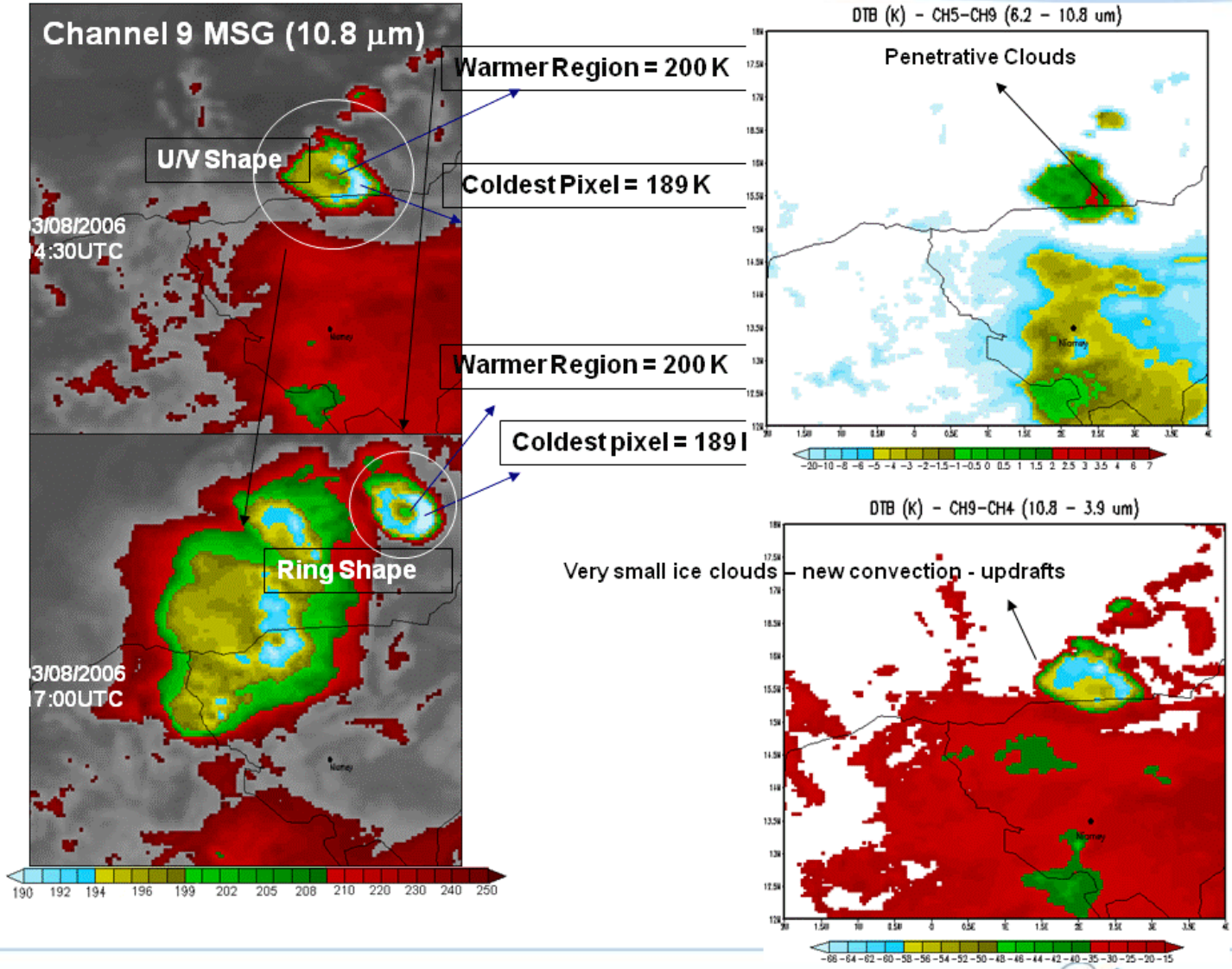
The ForTraCC





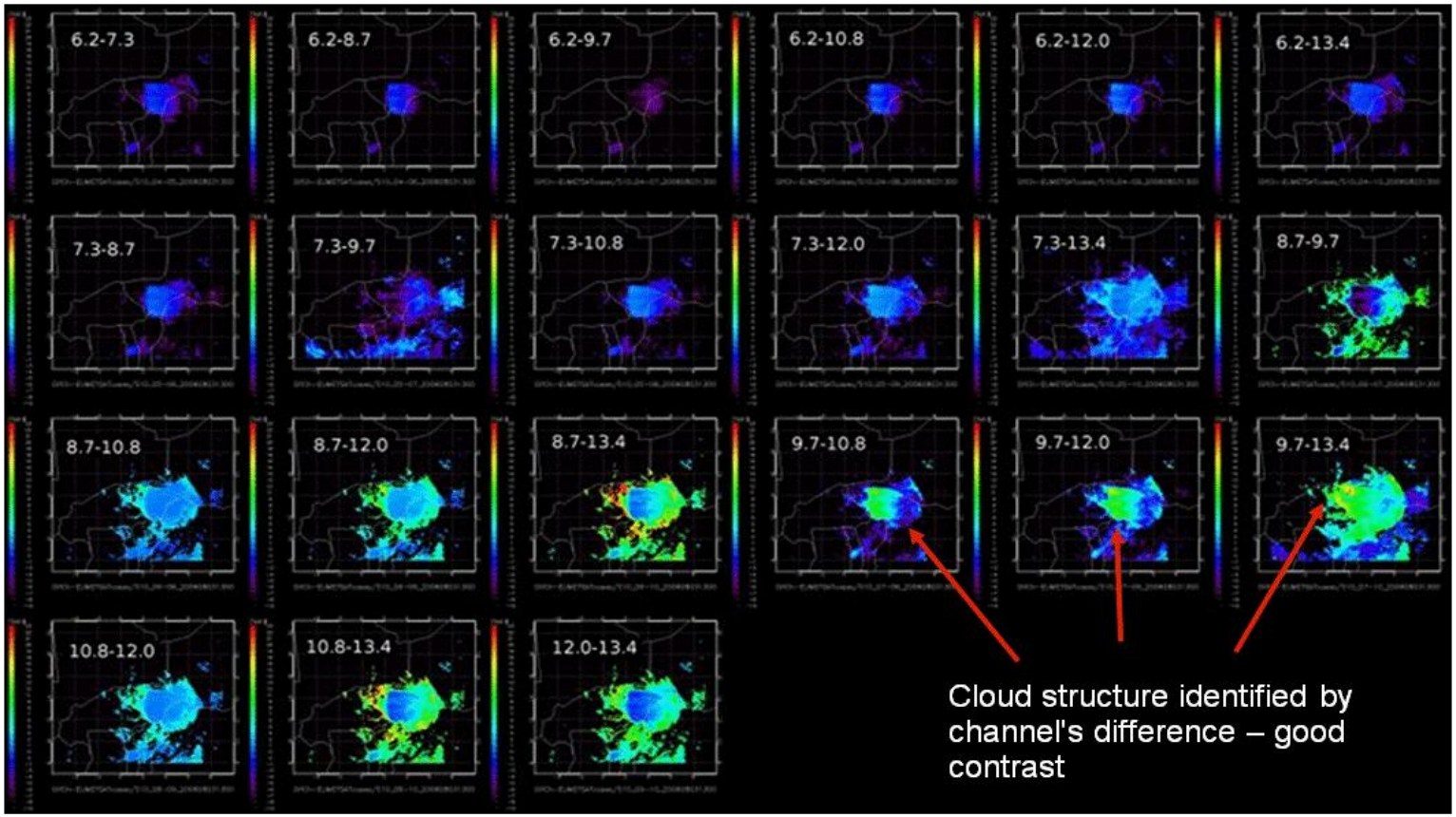


Multichannel Application



DETECTING MCS INNER CLOUD TOP DYNAMICS

SEVIRI channel combinations for a same scene

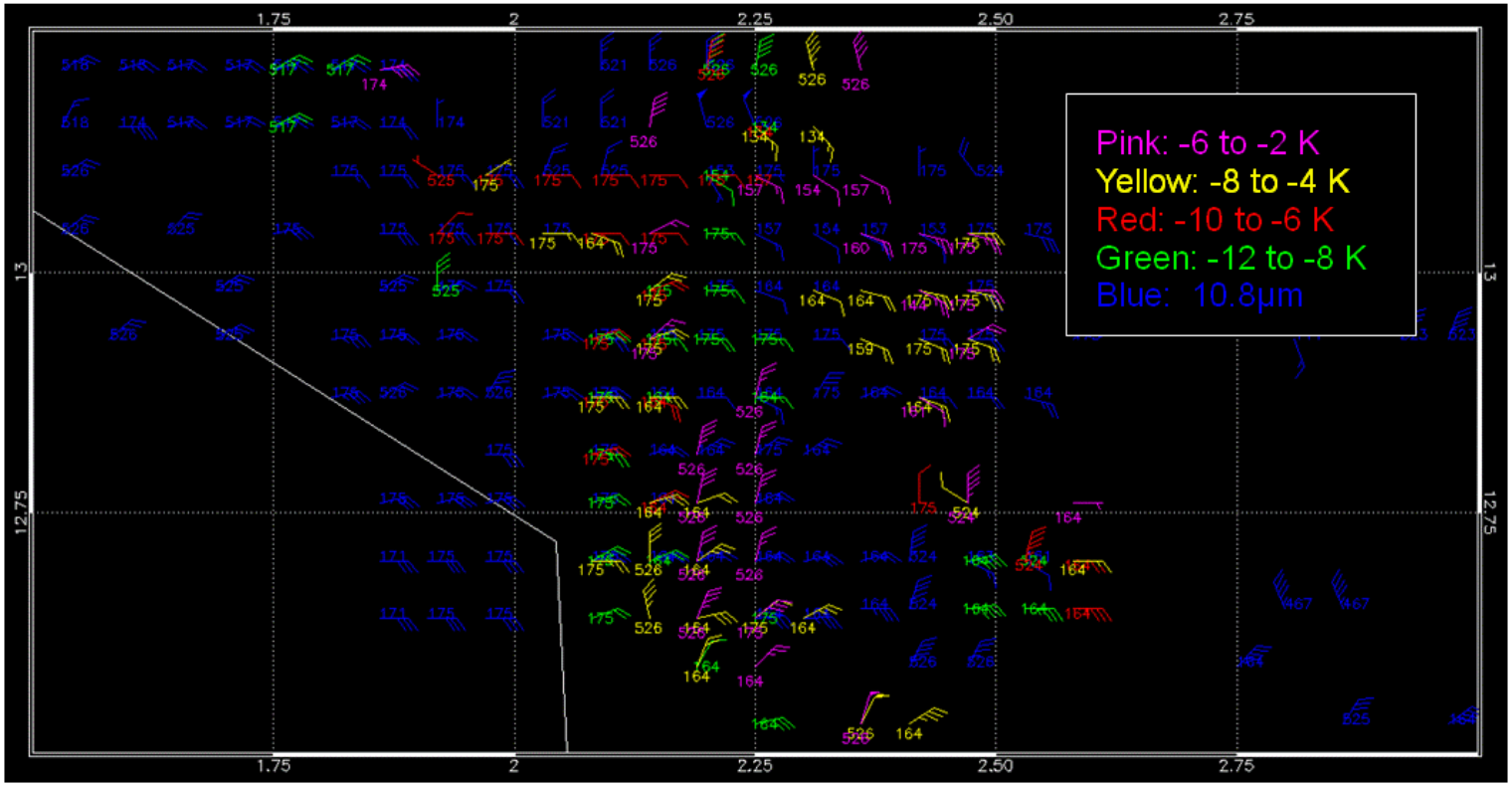


Colorbar: -25 K (purple) to 25 K (red)

Results from Renato Galante Phd. Degree

DETECTING MCS INNER CLOUD TOP DYNAMICS

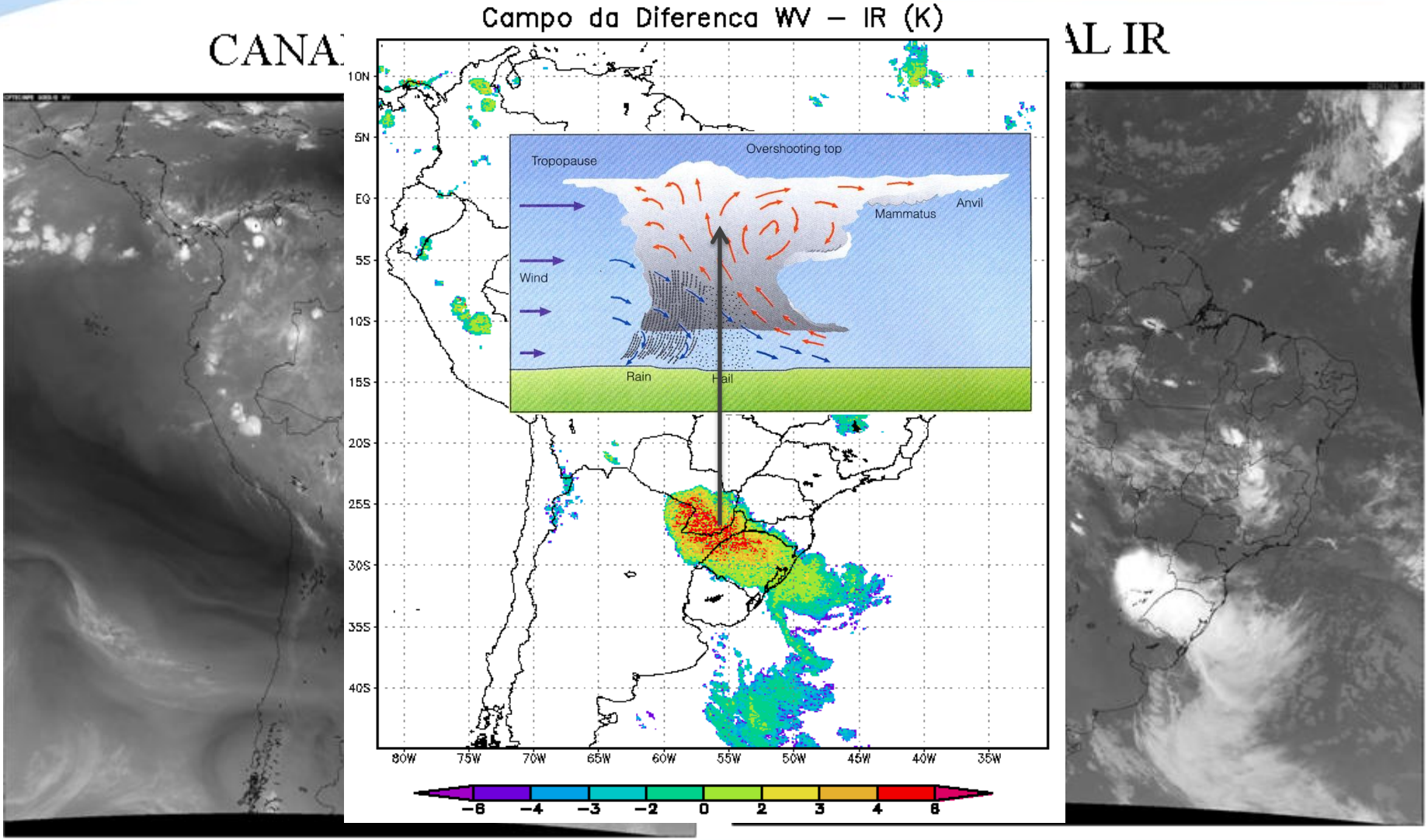
6.2 µm – 10.8 µm channel difference and 10.8 µm for 12:45 UTC



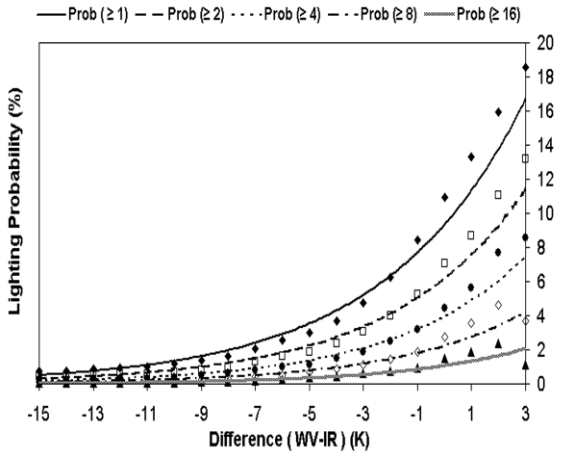
Results from Renato Galante Phd. Degree

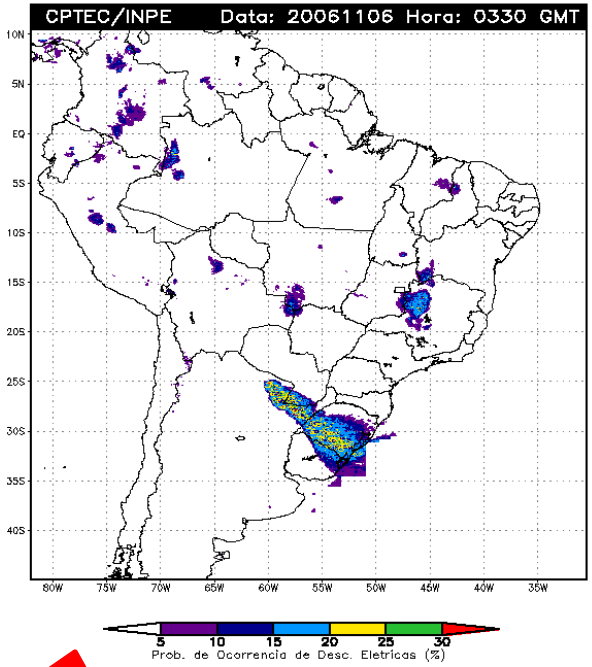
Detection of Lightning

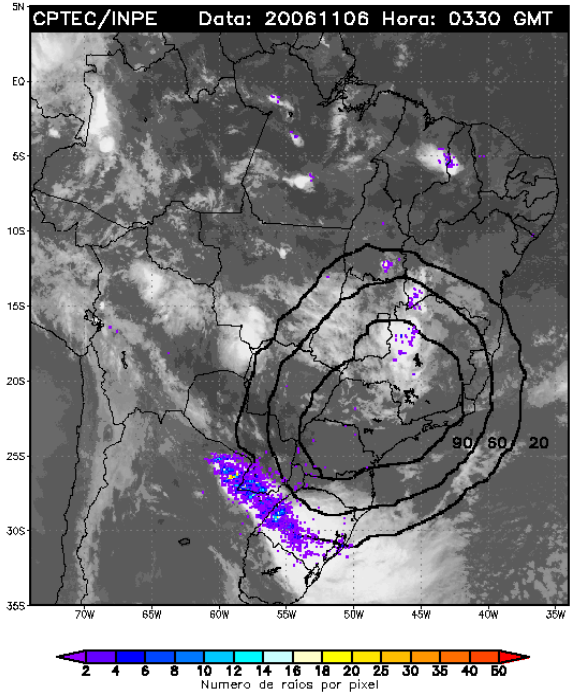
WV – IR Difference



Detection of Lightning

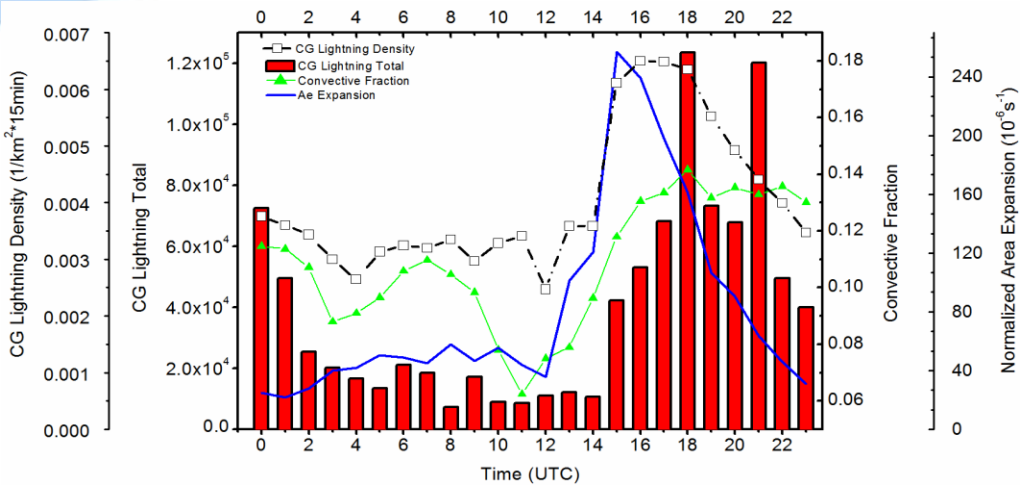


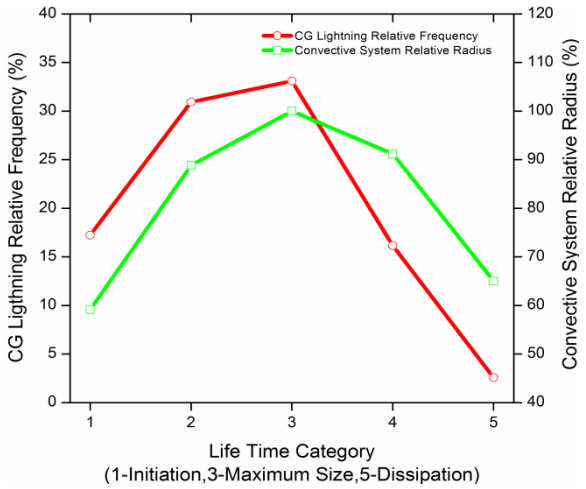


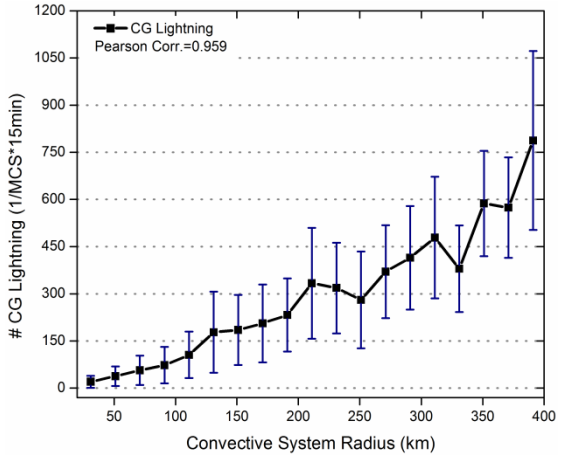


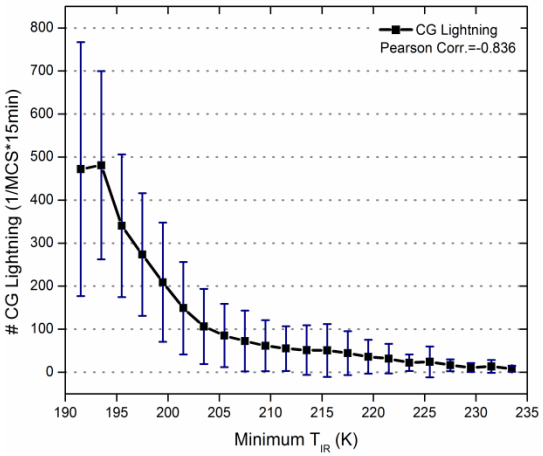
Machado et al., 2009, Atmos. Res.

MCS and Lightning Activities.



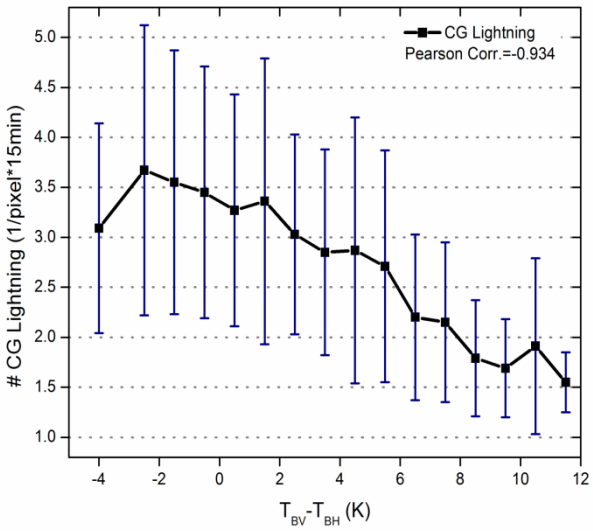


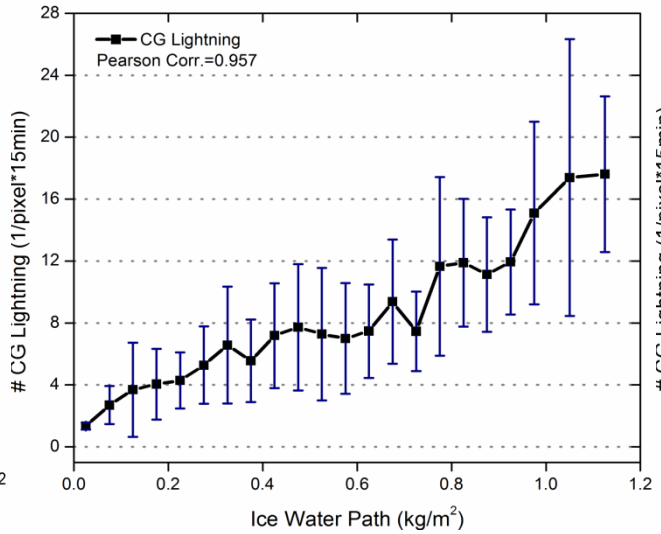


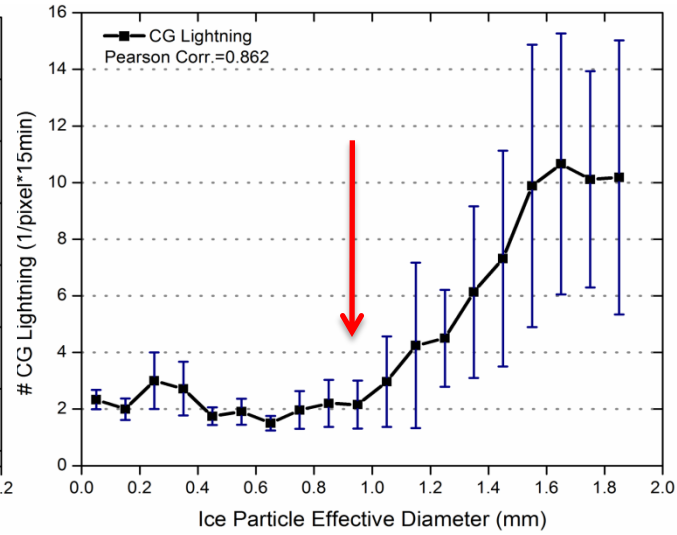


Mattos and Machado, 2010 Submitted to Atmos. Res.

MCS and Lightning Activities.







Variation of average and standard deviation of CG lightning occurrence in 15 minute intervals by pixel (# CG lightning/pixel*15min) as a function of (a) Ice Particle Effective Diameter (mm), (b) Ice Water Path (kg/m3) and of the (c) polarized Temperature Difference at 85 GHz (TBV-TBH).

Mattos and Machado, 2010 Submitted to Atmos. Res.

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Thank You

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