SOS-CHUVA - A Nowcasting Project

Luiz Machado (1), Edmilson Freitas (2), Eder Vendrasco (1), Kleber Nacaratto (1), Rachel Albrecht (2), Daniel Vila (1), Ana Avila (3), Felipe Pilau (3), Madeleine Sanchez (1), Luiz Guarino (1), and Jean-François Ribaud (1)

(1) INPE - Instituto Nacional de Pesquisas Espaciais, Brazil , (2) USP - Universidade de São Paulo, Brazil, (3) UNICAMP - Universidade de Campinas, Brazil

This presentation describes some of the initiatives of the SOS-CHUVA a nowcasting project running in São Paulo, Brazil. The aims of this project is to develop research in nowcasting of intense and severe thunderstorms using dual polarization radar, satellite, ground instrumentation and modeling. The project also developed an Application for cell phone to award population about the weather in real time. Examples of the intense events selected for case studies will be presented from the observation point of view and modeling. The project uses the WRF and BRAMS cloud resolving model (CRM - 1 km resolution) for the studies and nowcasting. In addition, several networks were installed as hail pads, raingauge, disdrometers and field mills. WRF is being used assimilating radar data and testing different microphysics parametrization, the main goal is to reduce the model spin up to be used in nowcasting. From the observation side, new methodologies are being tested as nowcasting routines using dual pol radar and lightning information from field mill and VHF sensors. An adapted hydrometeor classification is being evaluated to develop a nowcasting system based in the Lagrangian time derivation of the volume occupied by specific hydrometeor types. Routines adapted to the WRF model are employed allowing comparison between CRM and radar.