P56   Improving high altitude balloon trajectory predictions with WRF

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Research being done by Montana Space Grant Consortium (MSGC) involves producing better high altitude balloon trajectory predictions using the Weather Research Forecasting System (WRF). Balloon borne platforms are essential for remote sensing operations as they have the ability to record high vertical resolution data, access to stratospheric conditions, and are cost efficient. Current accepted operational prediction software uses the Global Forecasting System (GFS), which has very coarse resolution for short duration balloon flights. To increase forecast flight trajectory accuracy we are running WRF and using it's higher resolution meteorological output data and topographic information to initialize MSGC's developed software model to calculate predictions for a balloon's path. Predicted landing location via GFS and WRF are compared against actual landing location for evaluation of model choice on initial conditions. Early analysis indicates better predictive results utilizing WRF. Implications are important for remote sensing applications requiring stricter execution parameters of balloon borne platforms such as those required when making air quality measurements in and over urban areas.