



NWP prediction at ESRL/GSD: Latest developments and applications for physics parameterizations

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A summary of ESRL/GSD physics parameterization modeling efforts will be presented on both regional and global scale. The physics packages developed at ESRL include a scale-aware parameterization of subgrid cloudiness feedback to radiation (coupled PBL, microphysics, radiation, shallow convection) and the Grell-Freitas scale and aerosol aware convective parameterization. ESRL also has been developing improved inline chemistry/aerosol techniques being applied in both regional and global models. Increasingly effective reforecasting has been successfully applied to global models by ESRL for short and medium range NWP, and at subseasonal time scales using, in part, advanced physics adapted from the regional scale. The mesoscale physics suite in the HRRR/RAP model is now in preparation for testing with NOAA's upcoming FV3 global model.