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Precipitation fields for soil-moisture determination in ELDAS

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1 Introduction

Within the framework of ELDAS, a EU-founded project on the development of a *E*uropean *L*and *D*ata *A*ssimilation *S*ystem to predict floods and droughts, our contribution was to provide precipitation fields on a regular 0.2° latitude/longitude grid with daily and 3-hourly temporal resolution [1]. 3-hourly fields are generated by disaggregating the daily analysis with additional information from weather radars and serve as ground truth for NWP model verification and as forcings for assimilation schemes. At the conference these precipitation datasets as well as some applications and verifications will be presented.

2 Data and Method

For the ELDAS precipitation dataset about 1,000 synoptic and 20,000 climate precipitation gauges from countries of the European Union have been collected on a daily basis. All collected rain-gauge measurements have been corrected for systematic measurement errors - mainly wind induced errors, evaporation and wetting losses - and have been analysed on a regular 0.2° lat/lon grid using an OI technique [2]. These daily precipitation analysis have been disaggregated with further informations from 3-hourly accumulated radar derived precipitation fields using a linear adjustment procedure. These radar informations have been provided by the *BALT*EX *RAD*ar (BALTRAD) and the *C*entral *E*uropean *RAD*ar (CERAD) networks.

3 Results

The 3-hourly fields and the area outside the footprint of radar data, which has been blended by fields of ECMWF t511 experiment runs, have been calibrated with the ground truth fields on a daily basis. The 3-hourly and daily precipitation fields are available for the ELDAS period Oct. 1999 to Dec. 2000 and distributed through the ECMWF MARS archive. Selected results of NWP applications forced by the daily accumulated precipitation from partners involved in ELDAS will be presented at the conference. Improvements in the disaggregation procedure is currently under work. Results and verifications, expressed in terms of skill scores [3], will also be presented at the conference.

References

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