

# **COBEL-ISBA local ensemble forecast system for fog and low clouds**

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On main international airports, poor visibility is a plague for air traffic and skillful low visibility forecasts is essential for flight management. For this purpose, the COBEL-ISBA local numerical forecast system has been implemented at Paris CDG international airport. This local approach is efficient thanks to the assimilation of detailed local observations. However even with dedicated observations and initialization, uncertainties remain in both initial conditions and mesoscale forcings. The goal of the research presented here is to address the sensitivity of COBEL-ISBA forecast to initial conditions and mesoscale forcings during winter season 2002-2003. COBEL-ISBA main sources of uncertainty on input parameters has been estimated and the evaluation of parameters uncertainty on the forecast has been studied. A budget strategy is applied during the winter period to quantify COBEL-ISBA sensitivity. One focuses on the dispersion of the COBEL-ISBA forecasts. This study allows to build a local ensemble prediction system based on COBEL-ISBA. The results will point out COBEL-ISBA potential for ensemble forecasting by expliciting sources of uncertainty that lead to dispersion.