

Virtual aircraft: a new approach to compare airborne in-cloud measurements and LES simulations.

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Many recent cloud studies combine airborne in-cloud measurements and numerical LES simulations. This synergistic approach allows to feed the model with the realistic boundary conditions and forcings in order to compare results of the numerical experiment to the experimental data. This comparison is, however, biased by different sampling strategies. We propose to collect statistics in the virtual reality of numerical simulation in the same way as research aircraft samples the real atmosphere: along complicated flight trajectory in course of cloud evolution. In this way conditional statistics of cloud properties collected by “virtual aircraft” can be compared to their counterparts based on measurements. This approach will be illustrated with Physics of Stratocumulus Top (POST) flight TO13 case and corresponding LES simulation performed with EULAG model.