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Long-range transport of aerosols to Switzerland in August 2003

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Lidar measurements obtained at Neuchatel Observatory in August 2003 showed at times air masses with high optical backscatter reaching up to 4000 m asl, i.e. above the typical, well-mixed atmospheric boundary layer. The backscatter signal was thus most likely caused by non-local aerosols. The origin of these aerosols was pinned down with backward trajectory calculations based on the analysis fields of the aLMo (alpine Local Model) model of MeteoSwiss. In-situ data of the high-alpine research station at Jungfraujoch, Switzerland, were analysed to determine if the aerosols consisted of mineral dust from the Sahara desert, or whether they originated in the then widespread forest fires in southern Europe (Portugal, Spain, France).