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Effects of the new conventional model of VLBI antenna thermal deformation on the terrestrial reference frame

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The conventional model of VLBI (Very Long Baseline Interferometry) antenna deformation due to variations of air temperature have been currently updated. We investigate the effects of the new model, which has been implemented into the OCCAM VLBI analysis software, on the terrestrial reference frame. The time lag between the change of air temperature and the corresponding expansion of the telescope was considered for various antenna steel and concrete mount constructions as well. We interpolate the temperatures at the VLBI sites from the global numerical weather data of the European Centre of Medium-Range Weather Forecasts (ECMWF). The differences applying the previous and the new model as well as the effects when neglecting the time lag are assessed.