



H₂ budget of 2001-2006 ECHAM5-MOZ model run and comparison to NOAA station measurements

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Within the framework of the EUROHYDROS project, the ECHAM5-MOZ model was run for the years 2001-2006 with operational meteorological data from ECMWF. The model includes a description of the tropospheric hydrogen cycle with all known sinks and sources. The dominant H₂ sink of deposition was parameterized according to Price et al. (2007). Emissions were used from the RETRO inventory for the year 2000. Following Kim et al. (2006) the NO_x emissions over the Ohio valley (35 – 40°N, 80 – 90°W) were scaled down by up to 32% compared to the 2000 emissions for the year 2006. The NO_x emissions over East Central China (30 – 40°N, 110 – 123°E) and Hong Kong (21 – 24°N, 111-116°E) were increased by up to 53% and 60% compared to 2000 emissions for the year 2006, respectively, following the trend given in Richter et al. (2005). Vegetation fire emissions are from the GFED-version 2 inventory by van der Werf et al. (2006). The model results are discussed with focus on the H₂ budget terms and are compared to measurements of H₂ at the NOAA stations. Further, the discussion focusses on the seasonal and diurnal variability.