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Comparison of early Upper-Air Observations in China and Korea with the Twentieth Century Reanalysis

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In the framework of the EU FP7 project ERA-CLIM, hitherto unavailable early upper-air observations from China and Korea have been digitised. These encompass two kite records obtained during the Sino-Swedish Expedition 1931/32 in the border region of China and Mongolia (Edsin Gol, Ikengüng, total 217 profiles), three pilot balloon, one kite and one aircraft record from the early 1930s from China (Nanking, Peiping, Sian, ca. 2,300 profiles), and seven radiosonde records (total ca. 4,300 profiles) registered by the Japanese military during the Second World War in Korea (Incheon) and in northeastern China (Changchun, Hailar, Taonan, Dalian, Jinzhou). The expedition records contain pressure, temperature and relative humidity data. The 1930s records from China contain wind (all) plus pressure and temperature data (only Nanking and Peiping). From the Japanese WWII records, six contain pressure, temperature and relative humidity data, and two contain wind data, with two stations (Incheon and Dalian) reporting both groups of parameters. All the data are given on geometrical altitude levels. Here, we compare the historical data with results from the Twentieth Century Reanalysis, a totally independent dataset that is based on the assimilation of synoptic pressure and hurricane tracks only, using monthly sea surface temperature and sea ice as boundary conditions.