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Long term evolution of geomagnetic indices at the Chambon la Forêt, Val Joyeux and Parc St Maur observatories

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Geomagnetic field variations have been continuously recorded near Paris since 1883: first in Parc St Maur (1883-1900), then in Val Joyeux (1901-1935) and eventually in Chambon la Forêt (since 1936). Until recently only data sampled every six hours were available in digital format from 1883 to 1922. Hourly data were kept in hand-written notebooks stored in the observatory's archive. A systematical digitization of this archive began in 2007, extending the hourly data series back in time. This makes it possible to investigate the evolution of irregular geomagnetic variations and S_R variations over more than a century in the Paris area. To this aim, we calculated several indices at Chambon la Forêt and its predecessors, including the inter-hourly variability (IHV) index recently proposed by Svalgaard et al. (2004). One difficulty comes from the change of recording practice in 1972, from hourly values to hourly means, which makes it necessary to reduce the index values prior to that date using an ad hoc model. We will present results of these calculations and discuss possible links with the long-term evolution of the sunspot number, the solar wind speed and the solar UV irradiance.