Open-ended, high cadence, Kp-like geomagnetic index Hp

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An open-ended, high cadence, Kp-like geomagnetic index, called Hp index, is developed within the H2020 project SWAMI (Space Weather Atmosphere Models and Indices). The traditional Kp index is an excellent measure for energy input by the solar wind and is widely used in space weather science and applications. The new planetary index Hp resembles the Kp index by having a similar derivation scheme and a nearly identical frequency distribution of index values. Hp is available from 1995 onward with different time resolutions, e.g., 30 minutes and 60 minutes, and thus provides a higher temporal resolution than the 3-hourly Kp index. Additionally, events with Hp > 9 were further subdivided using an open-ended scale (9o, 9+, 10-, 10o, 10+, 11-, ...) to represent the highest levels of geomagnetic activity with higher resolution.