



## **Long series of geomagnetic measurements – unique at satellite era**

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We have long appreciated that magnetic measurements obtained at Earth's surface are of great value in characterizing geomagnetic field behavior and then probing the deep interior of our Planet. The existence of new magnetic satellite missions data offer a new detailed global understanding of the geomagnetic field. However, when our interest moves over long-time scales, the very long series of measurements play an important role. Here, we firstly provide an updated series of geomagnetic declination in Paris, shortly after a very special occasion: its value has reached zero after some 350 years of westerly values. We take this occasion to emphasize the importance of long series of continuous measurements, mainly when various techniques are used to detect the abrupt changes in geomagnetic field, the geomagnetic jerks. Many novel concepts originated in dynamical systems or information theory have been developed, partly motivated by specific research questions from the geosciences. This continuously extending toolbox of nonlinear time series analysis is a key to understand the complexity of geomagnetic field. Here, motivated by these efforts, a series of entropy analysis are applied to geomagnetic field time series aiming to detect dynamical complex changes associated with geomagnetic jerks.