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Long-term Solar Variability Derived from Cosmogenic Radionuclides

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Direct observations of solar variability are restricted to the past 400 years after the invention of the telescope. In order to extend this record one has to rely on indirect data such as cosmogenic radionuclides. On the one hand, cosmogenic radionuclides offer an unprecedented extension of the solar variability record by at least 10'000 years. On the other hand, they contain also a geomagnetic and a climatic component which has to be removed to extract the solar signal. This can be achieved by combining 10Be records from different ice cores with the 14C data from tree rings. The status of these attempts are presented and discussed in terms of potential applications in solar forcing.