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Systematic Study of the Time-Dependence of the Sidereal Cosmic-Ray Anisotropy and Solar Dipole with IceCube MICHAEL LUKASIK, Univ of Wisconsin, Madison, ICECUBE COLLABORATION COLLABORATION — Between 2009 and 2016, the IceCube Detector located deep within the ice at the South Pole has detected nearly 380 billion cosmic rays. The large statistics of the data set allows us to observe the large- and small-scale anisotropy in their arrival direction distribution and the solar dipole caused by the orbital motion of the Earth. In this talk, we present a detailed systematic study of the sidereal anisotropy and the solar dipole. In particular, we search for a possible seasonal modulation in amplitude. Any statistically significant seasonal variation of the amplitude over the course of one orbital rotation could indicate the presence of a directional dependence, for example the Compton-Getting effect. To study the time dependence, the effect of the sidereal anisotropy on the solar dipole and vice versa need to be carefully studied and simulated.

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