Cosmic-Ray Studies with the Surface Instrumentation of IceCube / IceCube-Gen2

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1. **What is this contribution about?**
   - Air-shower investigations at IceCube
   - Future plans with IceTop Surface Enhancement and IceCube-Gen2 Surface Array
2. **Why is it relevant / interesting?**
   - Important to understand atmospheric neutrinos and muons
   - Veto for astrophysical neutrino alerts
   - IceCube is a unique instrument for cosmic ray air showers
   - Galactic Multi-Messenger Astronomy
3. **What have we done?**
   - Air Shower data analysis with various methods
   - Simulations and design studies for future instrumentation
4. **What is the result?**
   - Energy Spectra and Elemental Composition 100 TeV – 100 PeV
   - Rich Cosmic Ray Physics Program for the future