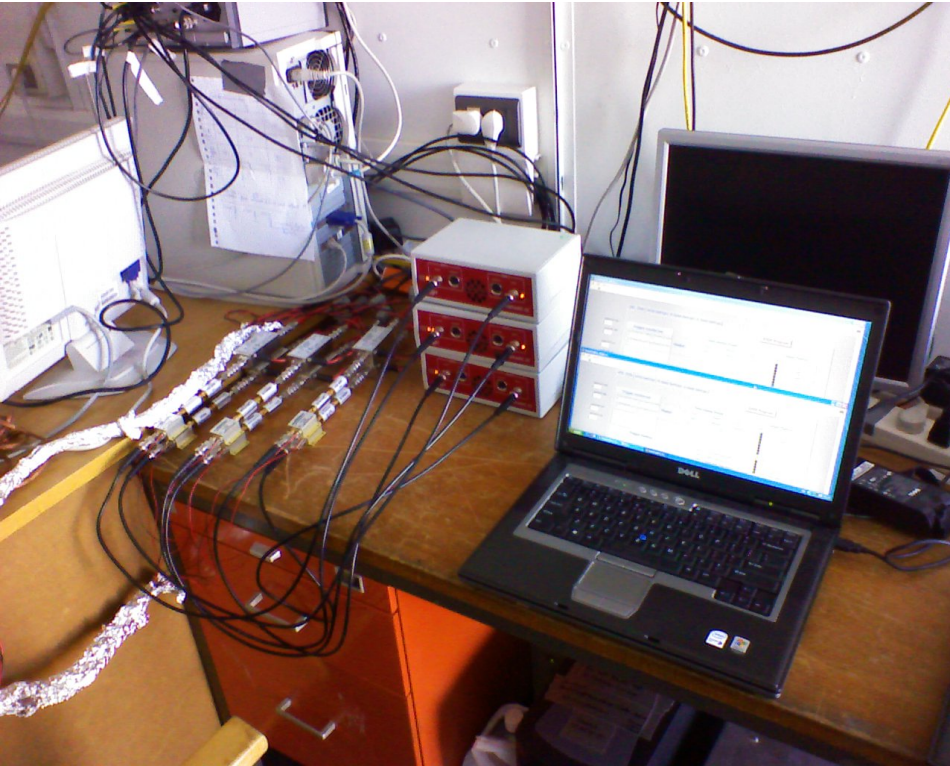


# Cosmic Ray programme and connections to other Nikhef activities

Charles Timmermans

# Past (and maybe future) synergy

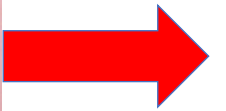


HiSPARC electronics!

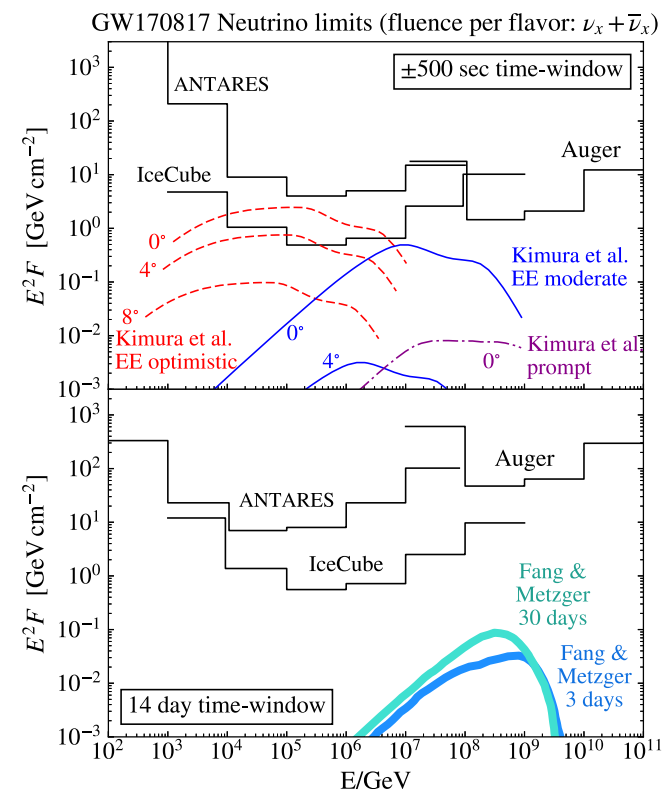
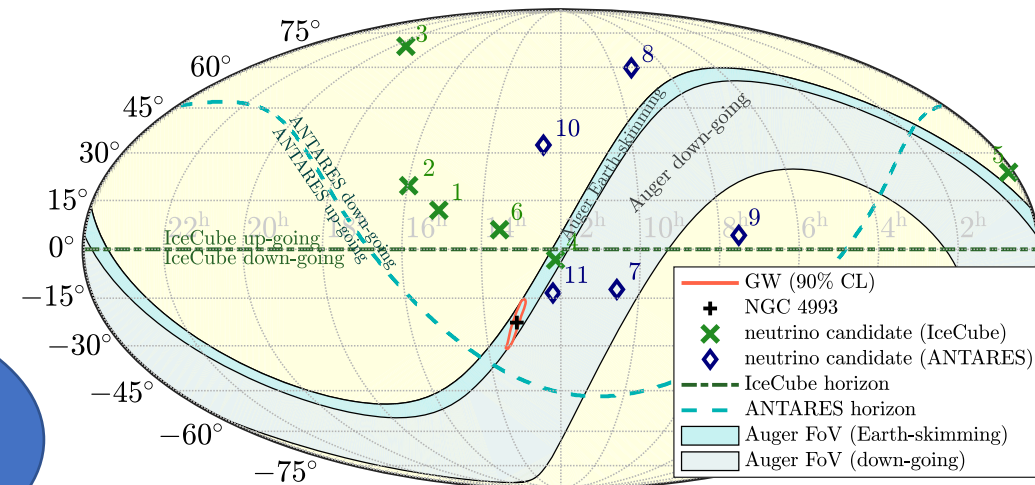
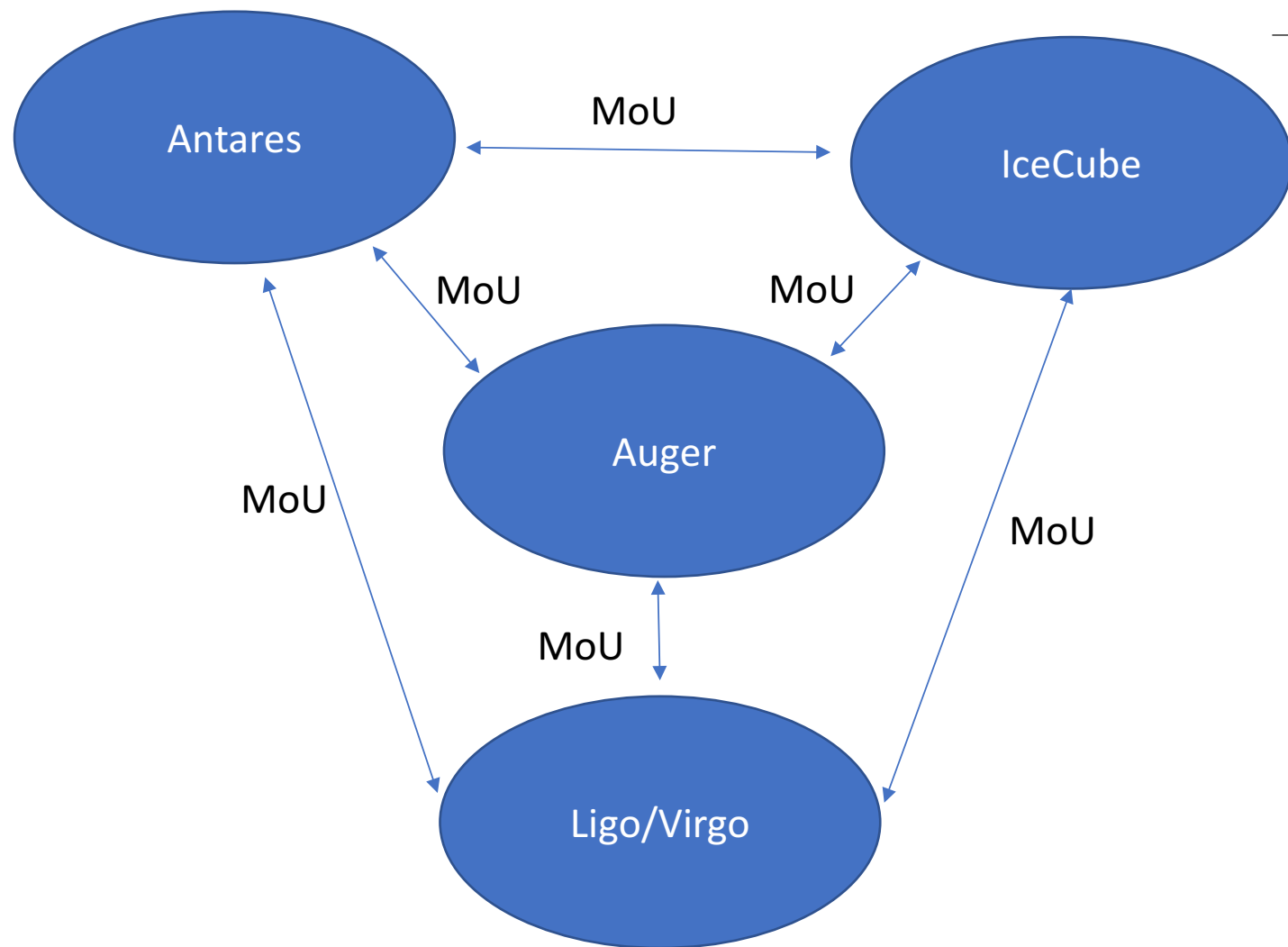
*Nikhef technological challenge:  
Low power low cost autonomous stations!*



Low power electronics



# Connections



# Combined articles

**Search for High-energy Neutrinos from Binary Neutron Star Merger GW170817 with ANTARES, IceCube, and the Pierre Auger Observatory**

The Astrophysical Journal Letters, 850:L35, 2017

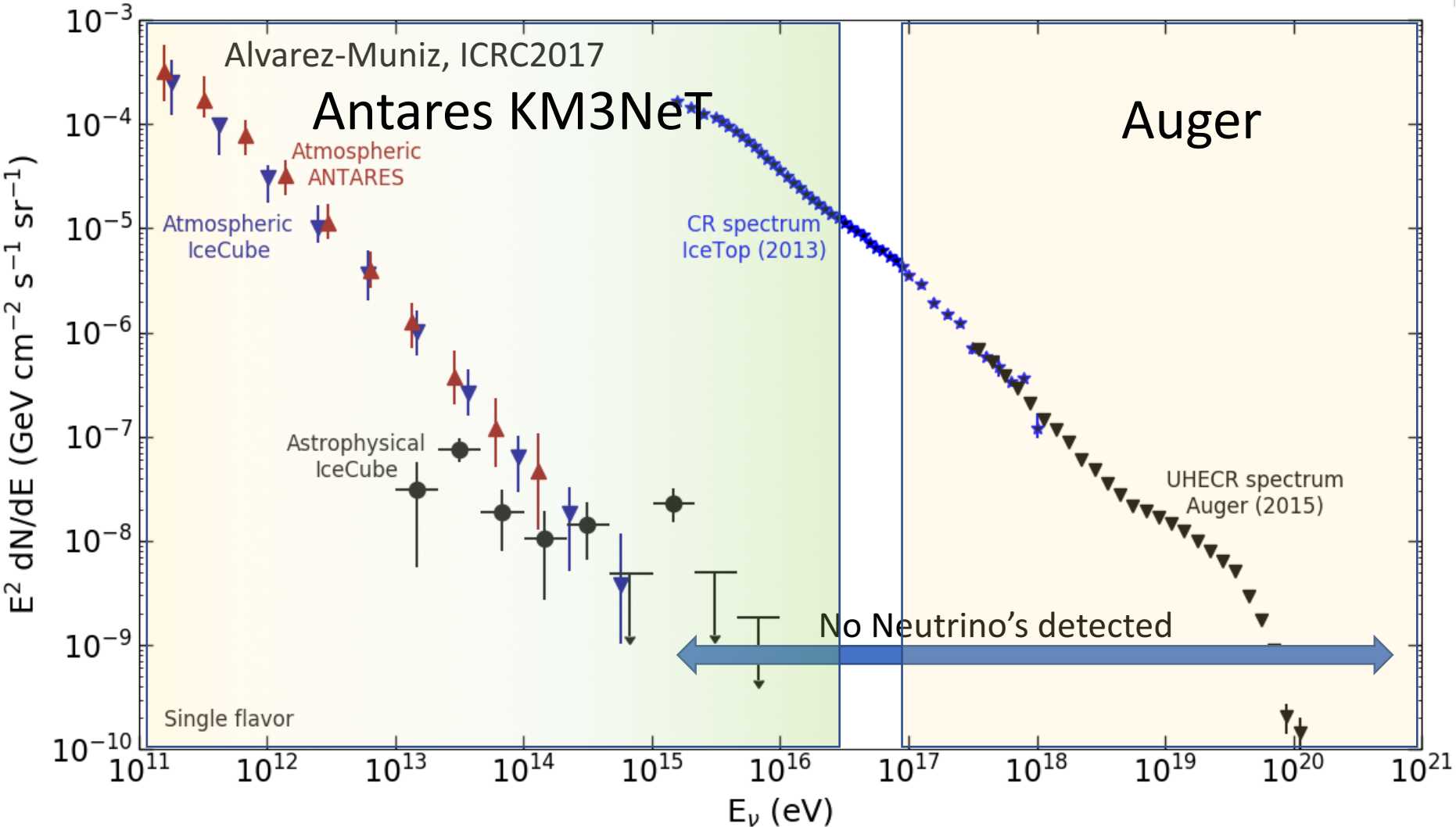
**Multi-messenger Observations of a Binary Neutron Star Merger**

The Astrophysical Journal Letters, 848:L12, 2017

**Search for correlations between the arrival directions of IceCube neutrino events and ultrahigh-energy cosmic rays detected by the Pierre Auger Observatory and the Telescope Array**

JCAP 01 (2016) 037

# Neutrinos and Cosmic Rays



# Future for Neutrinos (und UHE photons and UHECR)

