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Multi-messenger astronomy driven by the High-energy cosmic neutrinos.

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The era of high energy neutrino astronomy has come. The IceCube Neutrino Observatory started to operate the two online neutrino event selection channels, HESE (High-Energy Starting Event) and EHE (Extremely-High Energy).

Information on a cosmic neutrino event candidate identified by these selections are delivered in public to world-wide astronomical facilities, which realize prompt follow-up observations. Recently the EHE channel detected a high energy neutrino, IceCube-170922A, which was followed by an extensive multi-wavelength campaign. In this talk we present the details on the detection of this event and the follow-up observations. A suggested possibility of identifying a high energy cosmic ray source is highlighted. We also discuss what the existing data of ultra-high energy cosmic rays (UHECRs), and high energy neutrinos can tell about a possible unified scheme to account all the UHECR and neutrino emissions in general.

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