

## 4th Uppsala workshop on Particle Physics with Neutrino Telescopes (PPNT19)



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### **Angular power spectrum analysis for dark matter signals at neutrino telescopes**

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Recent analyses of the diffuse TeV-PeV neutrino flux highlight a tension between different IceCube data samples that suggests a two-component scenario rather than a single steep power-law. Such a tension is further strengthened once the latest ANTARES data are also taken into account. Remarkably, both experiments show an excess in the same energy range (40-200 TeV), whose origin could intriguingly be related to dark matter. In this talk, I discuss in a multi-messenger context the allowed features of a potential dark matter signal at neutrino telescopes, paying particular attention to the neutrino angular distribution. In particular, I describe a new analysis on the angular power spectrum of neutrino events, reporting current dark matter constraints for different annihilating/decaying channel and performing a forecast for future data in IceCube-gen2 and KM3NeT.

#### **Summary**

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