PHYSICS AND ASTRONOMY
ARCNet
SPECIAL SEMINAR

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From AGN to molecular clouds: Neural networks in extragalactic and galactic contexts

Abstract

I will highlight the versatility of neural networks as classifiers by presenting their application to problems in two vastly different fields of astronomy:

1) Fuelled by the accretion of material onto a supermassive black hole, the Active Galactic Nuclei (AGN) found at the centres of many galaxies are among the most powerful sources of energy production in the universe. Understanding the dynamics and evolution of AGN requires accurately separating AGN-host galaxies from Star-Forming (SF) galaxies that lack AGN. We present a new method for classifying AGN & SF galaxies using a neural network trained with optical spectral features observed by the Sloan Digital Sky Survey. Our model shows that accurate classificatio48catnk 48cb4(e)64(c)17(an)-4( )64(cu330K)-ng 48cngf8(o)43(r)17(at)-3(e)-3(o)4