

# 2023 Departmental Poster Competition

Contribution ID : 15

## Comparing relativistic black hole and neutron star jets through radio variability

Friday 06 Oct 2023 at 13:00 (03h00')

### **Content :**

Accreting black holes and neutron stars can launch relativistic jets, for which there are many open questions relating to how they are collimated and accelerated, as the environment surrounding these jets is extreme in temperature, gravity, velocities, and magnetic fields. Jets are also difficult to investigate as none can be fully imaged, thus timing studies are used instead. For this project I take archival radio data of accreting black holes and neutron stars and produce power spectral densities, quantifying the level of variability present in these systems. Variability is generally related to the culmination of many jet parameters such as speed and opening angle, thus comparing radio variability is a method to also compare how similar or different their jets are overall. So far we find that black hole and neutron star jet variability is remarkably similar across a range of frequencies, indicating that both classes of jet are very similar despite a large difference in radio luminosity.

**Primary authors :** PATTIE, Eli (Texas Tech University)

**Co-authors :** Prof. MACCARONE, Thomas (Texas Tech University, Department of Physics) ; Dr. TETARENKO, Alexandra (University of Lethbridge)

**Presenter :** PATTIE, Eli (Texas Tech University)

**Session classification :** --not yet classified--

**Track classification :** --not yet classified--

**Type :** Poster