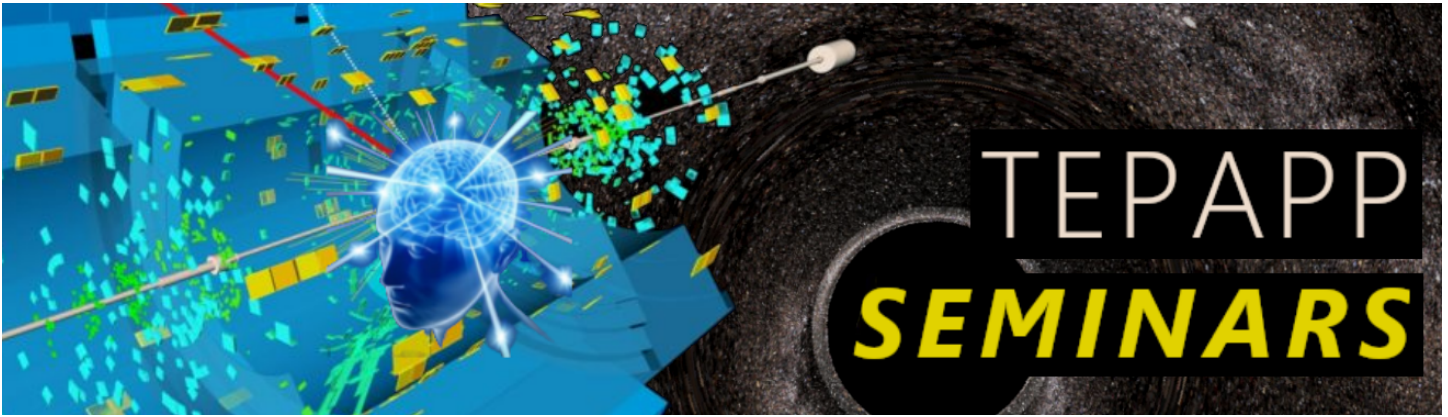




Tuesday, Oct 6, 4:15pm | PAB 4-708 | Zoom: 517 486 4983

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Expanding the Potential of Gravitational-Wave Astronomy: From Detections to Demographics and Future Directions

The recently released fifth Gravitational-Wave Transient Catalog (GWTC-5) contains nearly 400 confident signals from compact binary mergers, providing unprecedented statistical power to probe compact-object demographics. In this talk, I will briefly review the contents of GWTC-5 and summarize recent findings from population studies, along with key open challenges, such as the absence of any joint detection with an electromagnetic (EM) counterpart since GW170817. To address these challenges, I will introduce new approaches that leverage information from the GstLAL detection pipeline to enable more comprehensive population inference and to improve searches for EM transients associated with GW events. Finally, I will discuss other avenues for searching for the GW background in upcoming observing runs.