

# Multi-purpose Active-target Time-projection-chamber for nuclear astrophysics Experiments (MATE) at IMP

*Thursday, 10 October 2019 17:20 (20 minutes)*

New and next generation RIB facilities provide new insight into the nuclear structure and reaction dynamics of exotic nuclei. However, many of the most interesting species are always produced with very low intensities. Active target Time Projection Chamber is one powerful device with several significant features, including  $4\pi$  acceptance of the reaction products, full detection efficiency and high sensitivity, and an event-by-event reconstruction in three dimensions. This enables the use of TPC to break through beam limitation and study nuclei very far away from stability. One novel TPC is being developed in a collaboration at IMP. Our primary goal is to study astrophysically important fusion reactions and key ( $\alpha,p$ ) reactions in the X-ray bursts.

## Abstract Type

Talk

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**Session Classification:** S4: 探测器和电子学及应用技术

**Track Classification:** 探测器和电子学及应用技术