



Contribution ID: 52

Type: **Talk (in-person)**

LIGO Compact Binaries from Isolated Stellar Binaries

Thursday 8 September 2022 14:30 (20 minutes)

Since the first detection of gravitational waves on September 14 2015, there have been over 90 different GW events detected by LIGO. One of the formation scenarios for such compact binaries involve the evolution of isolated stellar binaries, which undergo multiple mass transfer episodes that ultimately lead to the formation of a tight binary composed of two compact objects such as neutron stars or black holes, product of the death of the massive stars.

In this work, we explore the scenario of the formation of the second compact object through a supernova explosion. The energy deposited on the explosion will ultimately determine if a NS or BH is formed, its spin, and the amount of material accreted by the companion. As a result we're able to calculate the effective spin of the resulting compact binary and compare it with LIGO observations. We find that this scenario produces systems with effective spins consistent with what is observed by LIGO.

Presenter: BATTA, Aldo (INAOE)