Contribution ID: **28** Type: **Invited Speaker**

The massive black hole binary path to coalescence

Wednesday, 25 October 2023 09:00 (30 minutes)

Massive black hole binaries (MBHBs) are expected to form at the centre of merging galaxies during the hierarchical assembly of the cosmic structure and are expected to be the loudest sources of gravitational waves (GWs) in the low frequency domain surveyed by the ongoing Pulsar Timing Array (PTA) campaigns and by the forthcoming LISA observatory.
A meaningful assessment of the detection prospects of the above experiments critically depends on the abundance and properties of MBHBs that form and evolve during the cosmic history. Therefore, understanding the MBH dynamical evolution before and after these binaries form is of paramount importance.
In this talk I will review the current understanding of MBHB evolution by analysing the several dynamical processes driving MBHBs at different scales and highlighting possible evolutionary bottlenecks that may arise along their path to coalescence.

Primary author: BONETTI, Matteo (University of Milano-Bicocca)

Presenter: BONETTI, Matteo (University of Milano-Bicocca)

Session Classification: Black Holes Astrophysics