



Contribution ID: 837

Type: **Talk in the parallel session**

## **GW190521: an intermediate-mass black hole observed with minimal assumptions**

*Friday, 9 July 2021 07:30 (20 minutes)*

The recent observing run of Advanced LIGO and Virgo was fruitful in gravitational-wave (GW) detections and the observation of GW190521 is one of the most important discoveries. With a remnant black hole of about 140 solar masses, this is the first strong evidence for the existence of intermediate-mass black holes that are heavier than stellar mass and lighter than supermassive black holes. In my presentation, I will present how the significance of this detection was established by the coherent WaveBurst (cWB) pipeline. This is an algorithm capable to detect GWs from unexpected sources, it operates with minimal assumptions and does not depend on a signal model. I will discuss the properties of GW190521 and why this event is exceptional. While cWB does not use a signal model for the detection, it allows determining what model fits the detected signal more accurately. I will show that GW190521 properties can be explained more exactly by models which incorporate the effects of precession and higher-order modes.

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**Session Classification:** Sources of Gravitational Waves

**Track Classification:** Gravitational Waves: Sources of Gravitational Waves