



Contribution ID: 115

Type: **Invited talk in the parallel session**

## **Type Ia Supernovae from Double Detonations in Merging Double White Dwarf Systems: The D6 Scenario**

*Monday, 5 July 2021 17:10 (20 minutes)*

Our theoretical understanding of the progenitors of Type Ia supernovae has undergone a revolution in the last decade, with sub-Chandrasekhar-mass scenarios quickly coming to the forefront of research. In this talk, I will focus on the “dynamically driven double-degenerate double-detonation” (D6) scenario, in which a double detonation on a sub-Chandrasekhar-mass white dwarf takes place during the merger of two white dwarfs. Our theoretical work shows that such explosions can accurately reproduce the entire observable range of Type Ia supernovae, from subluminous to overluminous. The scenario also predicts the possibility of a unique hypervelocity survivor. The discovery of three such stars makes this the only Type Ia supernova scenario that has been directly confirmed. This combination of theoretical and observational successes makes the D6 scenario an extremely promising channel to explain the bulk of Type Ia supernovae.

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**Session Classification:** White Dwarf Explosions

**Track Classification:** White Dwarfs: White Dwarf Explosions