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Type Ia supernovae: from explosion models to observations

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In this biased review talk I will first summarise a modelling workflow (the "pipeline") that connects rapid binary evolution progenitor models to supernova observables, via supernova explosion and nucleosynthesis simulations. I will then highlight how we can use model specific nucleosynthetic signatures of different explosion models to make inferences about what kind of white dwarfs explode as Type Ia supernovae. This includes population arguments based on the galactic chemical evolution of iron group elements such as manganese, as well as inferences on individual supernovae from the signatures long-lived radioactive isotopes leave in their late-time light curve.

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