Metal-poor massive stars:

the link between gravitational waves, star-formation and the dawn of the Universe

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Why should we care abour metal-poor massive stars?

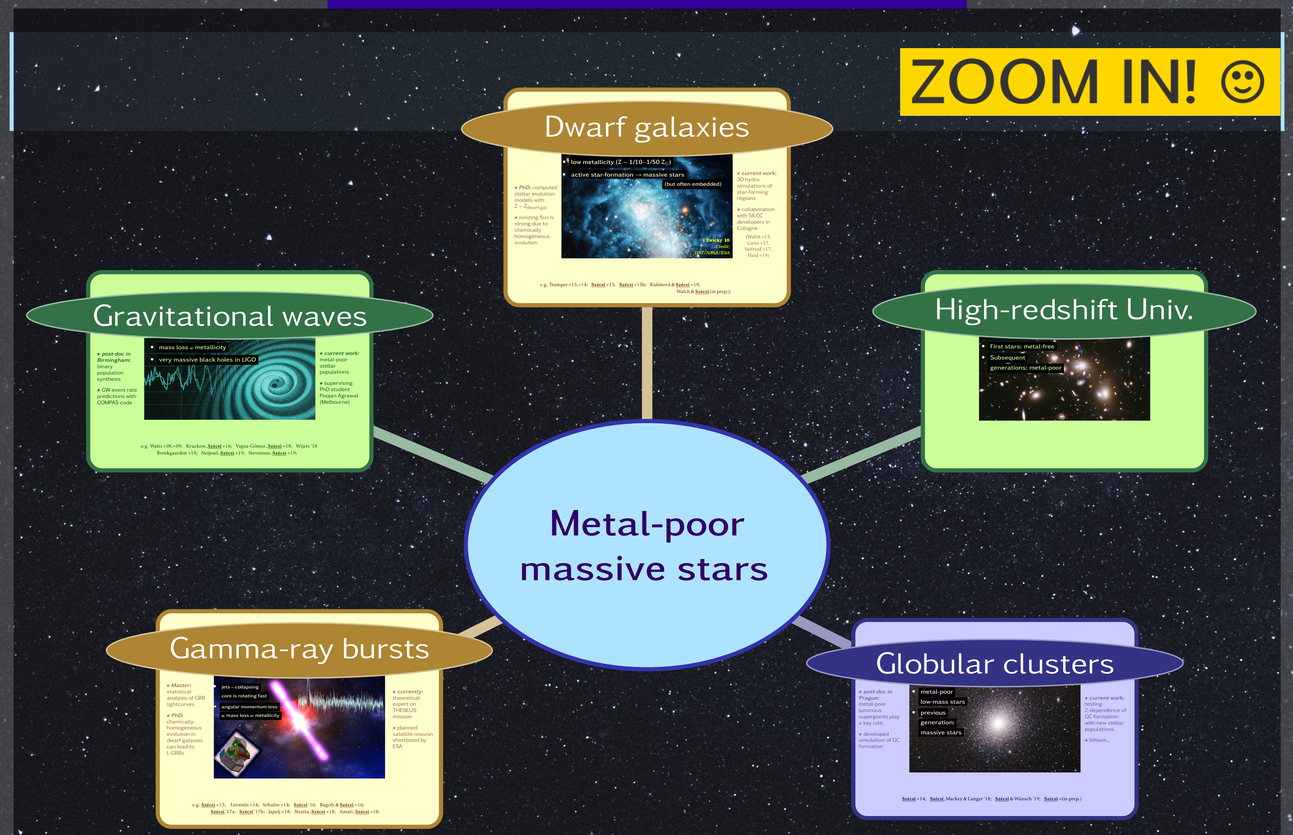
What do gravitational waves have in common with ancient globular clusters? What links these to cosmic explosions like gamma-ray bursts, to the energetic radiation in star-forming galaxies and even to the dawn of our Universe? What they have in common, is that all these phenomena — and more — have been **theorized to stem from metal-poor massive stars**, in one way or another.

Although gravitational waves are being detected on a regular basis, open questions remain about their origin. Especially, their **stellar parents** ('progenitors') are not well understood. What we know is that they must be massive and metal-poor, so they probably play a role in various other fields of astrophysics such as star-formation in the early Universe and gamma-ray burst research.

This is why I am studying metal-poor massive stars. To this end, I am **simulating the life ('evolution')** of these stars, and build synthetic populations out of them. This way I can predict their properties and final fates, and thus try to explain observations of gravitational waves, globular clusters, dwarf galaxies, gamma-ray bursts and the early Universe.

If you are interested in my work, do get in touch!

Linking various cosmic phenomena



Metal-poor massive stars are:

more massive than 8 times the Sun ($\gtrsim 8\,M_\odot$)

composed of less than 0.2% high elements (i.e. >99.8% or more H and He)

not existing in the Milky Way anymore, but they

used to exist in the past!

Questions? Why don't you get in touch?

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