Live fast and die young

Evolution and fate of massive stars

Renzo, M.

Publication date
2019

Document Version
Other version

License
Other

Propositions belonging to this thesis

1. This thesis is about all the things that stars and clusters throw away (winds, other stars, pulsational ejections, explosions). The title could have been "*Stellar garbage*".

2. To understand massive stars one cannot neglect the fact that the vast majority of the observations are influenced by binarity. On the other hand, to model massive binaries, one needs to understand single stars: an iterative approach is necessary.

3. The genus "homo" appeared on Earth for the first time about ~ 2 million years ago: if we extinguish ourselves within the next million years, humanity will have lasted about as long as the shortest lived (and most massive) stars.

4. Gravitational waves allow us to probe the evolution of the most massive stars that we cannot see in the Local Universe.

5. Systematic uncertainties in the functional dependence of line-driven wind mass loss rates affect the initial conditions for core-collapse supernovae modeling (Chapter 2)

6. Most massive binaries are disrupted by the first explosion: compact objects in a binary are an exception rather than the rule (Chapter 3)

7. Supernova kicks are the main cause of the disruption of massive binaries, but they typically do not change the velocity of the ejected companion: the "widowed" stars are commonly slow-moving walkaways rather than a faster runaways; (Chapter 3)

8. Being a theorist is no excuse not to look at **real** data (Chapter 4)

9. Science is[1] curiosity-driven, while academia is much too often ego-driven. We could create a much better environment for science with anonymous publications, since the whole point of modern science was to get rid of "*ipse dixit*".

[1] or should be?