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Nucleosynthesis in rotating massive stars and abundances of metal-poor stars

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Rotation largely affects the nucleosynthesis in massive stars, especially at low-metallicity. It triggers exchanges of material between different burning zones, leading to a strong overproduction of both light (e.g. C, N) and heavy (e.g. Sr, Ba) elements. After reviewing the interplay between rotational mixing and nucleosynthesis, I will discuss how surface chemical abundances of long-lived low mass metal-poor stars can provide hints on the nature of the early generation of massive stars, especially on their rotation and explosion. Particular attention will be paid to the peculiar Carbon-Enhanced Metal-Poor stars and their different formation scenarios.

Primary author: Mr CHOPLIN, Arthur (Geneva Observatory, Geneva University)

Presenter: Mr CHOPLIN, Arthur (Geneva Observatory, Geneva University)

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