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Type: Oral presentation

High angular resolution study of the Super Stellar Cluster population in IRAS 17138-1017

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Using GeMS-Gemini high angular AO-aided imaging in the near-IR, together with a radiative transfer code, we study the population of Super Stellar Clusters (SSCs) in terms of age, extinction, mass and luminosity. We detect with a fair degree of confidence 54 SSCs of mKs between 15 mag and 22 mag with a median photometric accuracy of 0.14 mag. When plotted on a color-color diagram and a color-magnitude diagram, it appears that most of the sources are much extinct with respect to an unreddened theoretical evolutionary track. The result points unambiguously to two distinct and very recent starburst episodes, at 2.8 and 4.5 Myr. While the SSCs in the 4.5 Myr starburst are distributed along the spiral arms, the 2.8 Myr SSCs are concentrated in the central region. The luminosity function presents a classical power-law behaviour, with however a slope which is shallow compared to other LIRGs. Comparison with radiative transfer simulations shows that especially for the youngest SSCs, the thermal emission by dust is not negligible and could explain the few very red SSCs that could not be dereddened safely. This effect could lead to an misevaluation of the age of the starburst by at most one or two Myr.

Field

Stellar physics (including solar physics)

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Classification de Session: Talk

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