Observing the millimeter Universe with the NIKA2 camera



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Galactic star formation with NIKA2 (GASTON): Quantifying interstellar filament convergence and its link to star formation

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Dusty filaments pervade the interstellar medium and their relation with the formation of stars is an active topic of research. In the past decade it has been shown that most prestellar and protostellar cores identified in nearby star forming regions (d<500pc) are located within dense interstellar filaments, suggesting a direct link between their evolution/fragmentation and the formation of star progenitors. In parallel, studies of individual Galactic plane (d~4kpc) hub filament systems, i.e. small networks of converging filaments, have shown that these structures might be systematically associated with massive star formation. Here, we make use of the Galactic plane observations of the GASTON large programme to systematically characterise and quantify filament convergence in order to identify an unbiased sample of hub filament systems. The relation between the increasing filament complexity of star-forming clumps and their ability to form massive stars will be investigated.

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