Q26a Physical properties of peculiar velocity structures in Aquila Rift identified using the Filfinder algorithm

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Stars form in molecular clouds, whose physical and kinematic conditions affect the initial mass function and the formation efficiency of stars. Physical and kinematic conditions are often influenced by perturbations such as outflows, stellar winds, supernova explosions, and cloud collisions, and the hints of such perturbations are often observed as peculiar velocity structures. In our last presentation, we unbiasedly analyzed the $1^\circ \times 1^\circ$ CO J=1–0 emission data cube of the Aquila Rift star-forming regions from the NRO Star Formation Legacy Project. By applying the FilFinder algorithm to the spatial median filtered position-velocity diagrams, we identified 51 groups of subparsec-scale peculiar velocity structures and classified them into several types, such as outflows and outflow-like features, isolated compact structures accelerated by expanding H II region shells, and compact structures that outline larger possible cloud interaction sites – Spatially Extended Moderately Broad Emission (SEMBE) and the 40 km s^{-1} cloud. We further obtained the physical properties of these types of peculiar velocity structures, including five new outflow candidates. Typical sizes, masses, peak CO brightnesses, line shapes and widths, kinetic energy, and dispersal timescales of individual types of peculiar velocity structures will be presented.