

# Proper-motion measurements in the Quintuplet cluster

Benjamin Hußmann,<sup>1</sup> Andrea Stolte<sup>1</sup> and Wolfgang Brandner<sup>2</sup>

<sup>1</sup>I. Physikalisches Institut, University of Cologne, Zùlpicher Str. 77, 50937 Köln, Germany

<sup>2</sup>Max-Planck-Institut für Astronomie, Königstuhl 17, 69117 Heidelberg, Germany

**Abstract.** The three young, massive star clusters found in the Galactic Centre region (Young Nuclear Cluster, the Arches and Quintuplet clusters) are among the six most massive star clusters in our Galaxy, with masses similar to low-mass, extragalactic starburst clusters. The conditions for star formation in this region are extreme and likely comparable to those found in the HII regions in starburst galaxies and tidal-interaction zones of mergers. As the inner Galactic star clusters can be resolved, they can serve as templates for extragalactic starburst clusters. With knowledge of the spectral types, masses and ages of the individual stars, their stellar population can be studied in detail, allowing derivation of their present-day mass function (PDMF). The Quintuplet cluster, with an age of about 4 Myr, is the most extended of the three clusters and also displays a lower spatial density. To determine its mass function correctly, the distinction between cluster and field stars is therefore of particular importance. We present the first determination of a proper-motion-membership sample for the Quintuplet cluster. By comparing two high-precision astrometric *VLT/NACO* data sets with a time baseline of 5 years, the displacement of the Quintuplet cluster relative to the field population was measured and a selection of the proper-motion cluster members could be established, from which the PDMF can be derived.

**Keywords.** Hertzsprung–Russell diagram, open clusters and associations: individual (Quintuplet)

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The full poster (in pdf format) is available at  
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