

# Implementing the Gaia Astrometric Global Iterative Solution (AGIS) in Java

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**Abstract** This paper provides a description of the Java software framework which has been constructed to run the Astrometric Global Iterative Solution for the Gaia mission. This is the mathematical framework to provide the rigid reference frame for Gaia observations from the Gaia data itself. This process makes Gaia a self calibrated, and input catalogue independent, mission. The framework is highly distributed typically running on a cluster of machines with a database back end. All code is written in the Java language. We describe the overall architecture and some of the details of the implementation.

**Keywords** Astrometry · Satellite · Algorithms · Implementation · Data management

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