

# Error Analysis of Photometry in SIM

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## Abstract

SIM provides accurate phase measurements of  $10^{-5}$  precision in order to reach a micro-arc-second accuracy for astrometry. The instrument also can make good measurements of photometry over wide wavelength coverage. In particular, it is possible to do differential photometry for precision of 0.3% simultaneously with phase measurements. Characteristics and differences between classic photometry and SIM photometry are discussed. A detailed descriptions of two photometers in SIM are presented and compared. The interferometric results of photometry from the MarK III interferometer are presented. The error sources of photometric measurements in SIM will be discussed, and the strategy of photometric measurements in SIM will be investigated.

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