

Talk at Splinter Meeting

Splinter L

K_s -BAND NEAR-INFRARED POLARIZED OBSERVATIONS OF
SAGITTARIUS A*

B. Shahzamanian^{1 2}, A. Eckart¹, M. Valencia-S.¹, et al.

¹ *I. Physikalisches Institut, Universitt zu Kln, Zlpicher Str. 77, 50937, Kln,
Germany shahzaman@ph1.uni-koeln.de*

² *Max-Planck-Institut fr Radioastronomie, Auf dem Hgel 69, 53121, Bonn, Germany*

Near-infrared polarimetry observation is a powerful tool to study the central sources of the Galactic centre (GC). In this talk I will present my results on analyzing the non-thermal polarized emission of Sagittarius A* (Sgr A*), the electromagnetic manifestation of the super-massive black hole.

We obtain typical polarization degrees on the order of $20\% \pm 10\%$ and a preferred polarization angle of $13^\circ \pm 15^\circ$. Simulations show the uncertainties under a total flux density of ~ 2 mJy are probably dominated by observational effects. At higher flux densities there are intrinsic variations of polarization degree and angle within well constrained ranges. Since the emission is most likely due to optically thin synchrotron radiation, the preferred polarization angle we find is very likely coupled to the intrinsic orientation of the Sgr A* system, i.e. a disk or jet/wind scenario associated with the super-massive black hole.