

## INTRADAY VARIATIONS OF POLARIZATION VECTOR IN BLAZARS: A KEY TO THE OPTICAL JET STRUCTURE?

E. Shablovinskaya<sup>1,2</sup>, E. Malygin<sup>2</sup> and D. Oparin<sup>2</sup>

<sup>1</sup>*Núcleo de Astronomía de la Facultad de Ingeniería, Universidad Diego Portales, Santiago, Chile*

<sup>2</sup>*Special Astrophysical Observatory of RAS, 369167, Nizhny Arkhyz, Russia*

*E-mail: e.shablie@yandex.com*

For several decades, the optical variability of blazars has been actively investigated, which has given rise to a large number of existing long-term monitoring campaigns. However, recently there has been a special interest not in the long, but in the rapid variability of blazars (intraday variability), which is associated with the relativistic plasma motion in the unresolved jet region at scales  $<0.01$  pc from the nucleus. It can be assumed that the study of this variability will help to study better the physical and kinematic processes in plasma and understand the nature of the flare activity of blazars. In this regard, the study of the rapid variations of the linear polarization vector, which are generated by the rotation of the emitting plasma in the jet magnetic field, helps to trace the trajectory of matter and the patterns of plasma motion. This report will present the results of optical polarimetric observations carried out by our team on the basis of 6m and 1m telescopes at SAO RAS: the study of the blazar S5 0716+714 radiation showed the presence of a period of the variability of brightness and a polarization vector variations on scales of 1.5 hours, constant on a long time scale; multi-colour monitoring of BL Lac polarization before, during and after the flare demonstrates the difference in the patterns of polarization vector variability depending on the wavelength, which can be considered as the influence of Faraday rotation; also, for a number of other blazars (3C 66A, 3C 454.3, S2 0109+224, etc.) in a quite not-in-flare state, it is shown the absence of signs of rotation of the polarization vector.