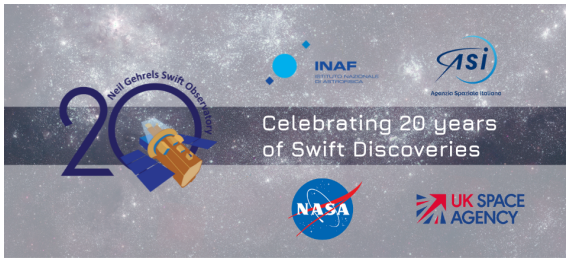

Contribution ID: **142** Type: **Poster**

Superoutbursts of WZ Sge-type dwarf novae as seen by Swift

Tuesday 25 March 2025 14:29 (1 minute)

WZ Sge-type stars are an extreme subgroup of the dwarf nova class of cataclysmic variables. In contrast to ordinary SU UMa-type dwarf novae, the WZ Sge-type stars exhibit only very rare (approximately once a decade) and long superoutbursts (a few weeks) with amplitudes exceeding 6 mag, and no normal outbursts. A unique property of superoutbursts is the appearance of superhumps, low-amplitude modulations with a period of a few percent longer than the orbital one. The superhumps are explained by a tidal instability of the accretion disc, which grows when the disc expands beyond the 3:1 resonance radius. This causes the disc to become quasi-elliptical and precess. Though X-ray properties of different dwarf novae are not always consistent, on the whole, they can be characterized by suppression of the X-ray flux during an outburst, accompanied by the softening of the X-ray spectrum. In contrast, the WZ Sge-type objects show an increase of their X-ray luminosity during an outburst. Unfortunately, not too many WZ Sge-type dwarf novae have been observed in X-rays, and until recently, only a few of them have complete coverage of an X-ray light curve throughout a superoutburst.

I will present the results of X-ray observations of these objects with Swift/XRT through their superoutbursts and the following decline, and compare the X-ray light curves with optical observations. One of our major results is the discovery of a temporal coincidence of changes in X-ray and superhump behaviour in some of these systems, thus linking the properties of the BL with the outer disc. Also, the post-outburst decline of the X-ray flux in some objects lasted at least a few hundred days, which poses a severe challenge to the disc instability model (DIM).

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Session Classification: Poster Session