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A multi-thermal analysis of M-class flare observed in common by STIX and XSM

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During nearly three years of operation, STIX aboard Solar Orbiter observed thousands of flares. Many of them were simultaneously observed by Solar X-Ray Monitor (XSM) on board Indian Chandrayaan-2 circling the Moon. We present results of a multi-wavelength study for one selected flare of M GOES class as seen from 1.a.u. STIX data provided the opportunity for a detailed analysis of hard X-ray emission in several energy bands including the light curves, reconstructed hard X-ray images and spectra. The differential emission measure diagnostics of the flaring plasma have been carried out based on interpretation of the XSM X-ray spectra. Using the differential evolution (DE) approach we have determined the “full” model of emitting source including the temperature, emission measure and elemental abundances as determined simultaneously throughout the flare. We discuss patterns of elemental composition history for individual plasma temperature components.