



Contribution ID: 94

Type: **Contributed talk**

Shape modelling and spectral classification of asteroids using data from the AS Vidojevica and Gaia DR3

Wednesday, 6 September 2023 12:10 (15 minutes)

We present the physical models of asteroids, their shapes, sense of rotation, and spectral classes using Gaia DR3. The shape models were determined using the lightcurve inversion method with the combination of dense photometric data from the Astronomical Station Vidojevica in Serbia and sparse data from the Gaia mission.

For obtaining asteroid low-resolution shapes, using sparse data decreases the amount of required observational time for obtaining the lightcurves at different geometrical circumstances. The GAIA DR3 spectra of our targets are compared to the mean reflectance spectra of all asteroid spectral classes from the Bus-DeMeo taxonomy. For asteroids with known taxonomy, we made comparisons with Gaia-determined spectral classes, and for unclassified asteroids, we made spectral classification.

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Session Classification: WG3: Planetary Systems Near and Far. Chair: Anthony Brown