

# New Perspectives on Hyperkähler Manifolds - A Celebration of Dimitri Markushevich's (60+2)nd Birthday

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## On the even-odd instanton correspondence for Fano threefolds

*Friday, 17 June 2022 11:30 (1 hour)*

Instanton bundles carry rich geometric data of a Fano threefold  $X$ . For instance, for low charge their moduli spaces are related to the fibres of the period map: this was shown by A. Iliev and D. Markushevich for threefolds of genus 8 – we will review ongoing work with A. Verra for the case of genus 10.

Depending on the parity of the index of  $X$ , these bundles exhibit different behaviour, yet their moduli spaces share some common features which I will review, starting with the monadic description.

A conjecture of A. Kuznetsov implies that, for some specific charges, there should be a correspondence between even and odd instantons moduli inducing a birational transformation of the associated projective bundles over threefolds having equivalent Kuznetsov categories. I will discuss work in progress with S. Zhang and S. Feyzbakhsh about this conjecture for genus 10 and 12.

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