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Genus 2 curves configurations on Fano surfaces. (English) Zbl 1215.14047
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Let S be the Fano surface which parameterizes lines of a cubic threefold F . The author considers the structure of genus 2 curves on S . These curves provide an obstruction for the very-ampleness of the cotangent map to $\mathbb{P}(H^0\Omega_S^*)$. The author shows that genus 2 curves in S are connected with involutions of certain type II of S . So, the author takes the subgroup Γ of the automorphisms group $\text{Aut}(S)$, generated by involutions of type II, and starts a classification of Fano surfaces in terms of Γ . For instance, the author constructs and studies Fano surfaces for which $\text{Aut}(S)$ contains a subgroup G , formed by involutions of type II, which is either $\mathbb{Z}/2\mathbb{Z}$ or the dihedral group \mathbb{D}_n , $n = 2, 3, 4, 5$, or the alternating group A_5 or $\text{PSL}_2(\mathbb{F}_{11})$. In these cases, the structure of the corresponding curves of genus 2 on S , and their degenerations, is described.

Reviewer: [Luca Chiantini \(Siena\)](#)

MSC:

[14J50](#) Automorphisms of surfaces and higher-dimensional varieties
[14J45](#) Fano varieties
[14J70](#) Hypersurfaces and algebraic geometry

Cited in 1 Document

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[Fano surfaces; curves of genus 2](#)

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