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Stability conditions on Fano threefolds of Picard number 1. (English) Zbl 1409.14034

Summary: We prove the conjectural Bogomolov-Gieseker type inequality for tilt-stable objects on each Fano threefold $X$ of Picard number 1. In view of the previous works [A. Bayer et al., J. Algebr. Geom. 23, No. 4, 693–710 (2014; Zbl 1310.14026), [A. Bayer et al., Invent. Math. 206, No. 3, 869–933 (2016; Zbl 1360.14057)] and [A. Bayer et al., J. Algebr. Geom. 23, No. 1, 117–163 (2014; Zbl 1306.14005)] on Bridgeland stability conditions, this induces an open subset of geometric stability conditions on $D^b(X)$. We also get a new stronger bound for Chern characters of slope semistable sheaves on $X$.

MSC:
14F05 Sheaves, derived categories of sheaves, etc. (MSC2010) 14J45 Fano varieties

Keywords: stability condition; Fano threefolds; Bogomolov-Gieseker type inequality

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References:

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