

K3 surfaces with action of the Mathieu group M_{20}
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Abstract:

It was shown by Mukai that the maximum order of a finite group acting faithfully and symplectically on a K3 surface is 960 and if such a group has order 960, then it is isomorphic to the Mathieu group M_{20} . In this talk, we are interested in projective K3 surfaces admitting a faithful symplectic action of the group M_{20} . The aim will be to describe all of them and to understand when it is possible to construct explicit projective models for these surfaces. We will also see that it exists an infinite number of K3 surfaces admitting such an action of M_{20} .