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# Compactifying Moduli Spaces for Abelian Varieties

By Martin C. Olsson

Springer. Paperback. Book Condition: New. Paperback. 286 pages. Dimensions: 9.2in. x 6.1in. x 0.7in. The problem of compactifying the moduli space  $A$  of principally polarized  $g$  abelian varieties has a long and rich history. The majority of recent work has focused on the toroidal compactifications constructed over  $\mathbb{C}$  by Mumford and his coworkers, and over  $\mathbb{Z}$  by Chai and Faltings. The main drawback of these compactifications is that they are not canonical and do not represent any reasonable moduli problem on the category of schemes. The starting point for this work is the realization of Alexeev and Nakamura that there is a canonical compactification of the moduli space of principally polarized abelian varieties. Indeed Alexeev describes a moduli problem representable by a proper algebraic stack over  $\mathbb{Z}$  which contains  $A$  as a dense open subset of one of its  $g$  irreducible components. In this text we explain how, using logarithmic structures in the sense of Fontaine, Illusie, and Kato, one can define a moduli problem carving out the main component in Alexeev's space. We also explain how to generalize the theory to higher degree polarizations and discuss various applications to moduli spaces for abelian varieties with level structure. This item ships from multiple...



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