
Preface

The cover picture shows a smooth quartic surface in space, the simplest example of a projective model of a $K3$ surface. In the following pages we will encounter many more examples of models of such surfaces.

The purpose of this volume is to study and classify projective models of complex $K3$ surfaces polarized by a line bundle L such that all smooth curves in $|L|$ have non-general Clifford index. Such models are in a natural way contained in rational normal scrolls.

These models are *special* in moduli in the sense that they do not represent the general member in the countable union of 19-dimensional families of polarized $K3$ surfaces. However, they are of interest because they fill up the set of models in \mathbf{P}^g for $g \leq 10$ not described as complete intersections in projective space or in a homogeneous space as described by Mukai, with a few classifiable exceptions.

Thus our study enables us to classify and describe all projective models of $K3$ surfaces of genus $g \leq 10$, which is the main aim of the volume.

Acknowledgements. We thank Kristian Ranestad, who suggested to study certain projective models of $K3$ surfaces in scrolls that had shown up in connection with his work on varieties of sums of powers (see [I-R1], [I-R2] and [R-S]). This idea was the starting point of our work.

We are also grateful to M. Coppens, G. Fløystad, S. Ishii, S. Lekaas, R. Piene, J. Stevens, S. A. Strømme, B. Toen and J. E. Vatne for useful conversations, and to G. M. Hana for pointing out several mistakes in an earlier version of the manuscript.

We also thank Alessandra Sarti who made us the nice picture we have used on the cover.

Most of this book was written while the authors were visitors at the Department of Mathematics, University of Utah, and at the Max-Planck-Institut

für Mathematik, Bonn, in the year 2000. We thank both institutions for their hospitality.

The second author was supported by a grant from the Research Council of Norway.

Bergen/Oslo, March 2004

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<http://www.springer.com/978-3-540-21505-9>

K3 Projective Models in Scrolls

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2004, VIII, 172 p., Softcover

ISBN: 978-3-540-21505-9