QUARTIC SURFACES WITH SINGULAR POINTS

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649185931

Quartic surfaces with singular points by C. M. Jessop

Except for use in any review, the reproduction or utilisation of this work in whole or in part in any form by any electronic, mechanical or other means, now known or hereafter invented, including xerography, photocopying and recording, or in any information storage or retrieval system, is forbidden without the permission of the publisher, Trieste Publishing Pty Ltd, PO Box 1576 Collingwood, Victoria 3066 Australia.

All rights reserved.

Edited by Trieste Publishing Pty Ltd.
Cover @ 2017

This book is sold subject to the condition that it shall not, by way of trade or otherwise, be lent, re-sold, hired out, or otherwise circulated without the publisher's prior consent in any form or binding or cover other than that in which it is published and without a similar condition including this condition being imposed on the subsequent purchaser.

www.triestepublishing.com

C. M. JESSOP

QUARTIC SURFACES WITH SINGULAR POINTS

Trieste

QUARTIC SURFACES

WITH SINGULAR POINTS

CAMBRIDGE UNIVERSITY PRESS
C. F. CLAY, MANAGER
London: FETTER LANE, E.C.
Edinburgh: 100 PRINCES STREET

New York: G. P. PUTNAM'S SONS
Bombay, Calcutta and Madras: MACMILLAN AND CO., LTD.
Toronto: J. M. DENT AND SONS, LTD.
Tokyo: THE MARUZEN-KABUSHIKI-KAISHA

All rights reserved

QUARTIC SURFACES

WITH SINGULAR POINTS

BY

C. M. JESSOP, M.A.

FORMERLY FELLOW OF CLARE COLLEGE, CAMBRIDGE
PROFESSOR OF MATHEMATICS IN ARMSTRONG COLLEGE
IN THE UNIVERSITY OF DURHAM

UNIV. OF CALIFORNIA
AT LOS ANGELES
LIBRARY

Cambridge :
at the University Press
1916

Cambridge:
PRINTED BY THE SYNDICS OF
THE UNIVERSITY PRESS

UNIV. OF CALIFORNIA
LOS ANGELES
LIBRARY

Mathematical Sciences Library
573
J47q

PREFACE

THE purpose of the present treatise is to give a brief account of the leading properties, at present known, of quartic surfaces which possess nodes or nodal curves.

A surface which would naturally take a prominent position in such a book is the Kummer surface, together with its special forms, the tetrahedroid and the wave surface, but the admirable work written by the late R. W. H. T. Hudson, entitled *Kummer's Quartic Surface*, renders unnecessary the inclusion of this subject. Ruled quartic surfaces have also been omitted.

For the convenience of readers, a brief summary of all the leading results discussed in this book has been prefixed in the form of an Introduction.

I have to express my great obligation to Prof. H. F. Baker, Sc.D., F.R.S., who has given much encouragement and valuable criticism. Finally I feel greatly indebted to the staff of the University Press for the way in which the printing has been carried out.

C. M. JESSOP.

March, 1916.

MATHEMATICS
JAN 20 '44
PUBLISHER

CONTENTS

		PAGE
	INTRODUCTION	xi

CHAPTER I.

QUARTIC SURFACES WITH ISOLATED SINGULAR POINTS.

ART.		
1, 2	Quartic surfaces with four to seven nodes	1
3	Quartic surfaces with more than seven nodes . . .	3
4, 5	Quartic surfaces with nodal sextic curves	4
6—12	Quartic surfaces with eight to sixteen nodes . . .	9

CHAPTER II.

DESMIC SURFACES.

13	Desmic tetrahedra	24
14	Quartic curves on the desmic surface	26
15—18	Expression of coordinates in terms of σ functions and resulting properties	27
19	Section by tangent plane	35
20	A mode of origin of the surface	35
21	The sixteen conics of the surface	37

CHAPTER III.

QUARTIC SURFACES WITH A DOUBLE CONIC.

22	Five cones touching surface along twisted quartic whose tangent planes meet surface in pairs of conics . .	38
23—28	Expression of coordinates in terms of two parameters and mapping of surface on a plane	40
29	The class of the surface	46
30	The sixteen lines of the surface	46
31	Origin of the surface by aid of two quadrics and a point.	47
32, 33	Perspective relationship with general cubic surface . .	49
34	Connection with plane quartic curve	52
35—37	Segre's method of projection in four-dimensional space .	55