J. DIFFERENTIAL GEOMETRY
27 (1988) 297–369

ON THE DIFFEOMORPHISM TYPES OF CERTAIN ALGEBRAIC SURFACES. I

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Introduction

Using the moduli space of anti-self-dual connections on $SU(2)$-bundles, Donaldson has introduced new invariants for closed, smooth 4-manifolds. The invariant of interest to us here is defined for simply connected, oriented 4-manifolds M of type $(1, n)$ for any $n \geqslant 1$ (type $(1, n)$ meaning that the self-intersection form q_M: $H^2(M; \mathbf{Z}) \to \mathbf{Z}$ defined by $q_M(x) = \int_M x \cup x$ is

Received by the editors July 7, 1986 and, in revised form, January 20, 1987. This material is based upon work partially supported by The National Science Foundation under Grants No. NSF DMS 85-03743 and NSF DMS 85-03758.