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Symplectic quotients and real loci

Let M be a compact, connected symplectic manifold with a Hamiltonian action of a compact n -dimensional torus T^n . Suppose that M is equipped with an anti-symplectic involution σ compatible with the T -action. The real locus of M is the fixed point set M^σ of σ . Duistermaat introduced real loci, and extended several theorems of symplectic geometry to real loci. We extend another classical result to real loci: the Kirwan surjectivity theorem. In addition, we compute the kernel of the real Kirwan map. We will mention several salient examples. This is joint work with Rebecca Goldin (George Mason University).