1111-14-317 **Ada Boralevi***, a.boralevi@tue.nl. *Orthogonal instantons and skew-Hamiltonian matrices.*

Let $M(r,n)$ be the moduli space of stable vector bundles on $\mathbb{P}^2$ of rank $r \geq 2$ and Chern classes $(c_1, c_2) = (0, n)$. An element E of $M(r,n)$ is called orthogonal (symplectic) if it is isomorphic to its dual via a symmetric (skew-symmetric) map. In 1980 Hulek proved that the space $M(r,n)$ is smooth irreducible; using similar techniques, in 2007 Ottaviani showed that the same holds true for the moduli space of symplectic elements of $M(r,n)$. In my talk I will explain an irreducibility result for orthogonal bundles on $\mathbb{P}^2$, obtained in joint work with R. Abuaf (Imperial College). Among the techniques that we used are some interesting properties of skew-Hamiltonian matrices and the study of special hyperplane sections of determinantal varieties. I will also illustrate possible generalizations of our work. (Received February 05, 2015)