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**Dynamics of Polynomial Differential Equations in the Quaternion Field**

In this talk, we summarize some known results on the polynomial differential equations in quaternion field, and report some new results on this subject. The proofs depend on different kinds of invariants and the theory of integrable Hamiltonian systems. Part of the work was done in collaboration with Sebastian Walcher.

**Xiang Zhang** is a Chair Professor of Mathematics at Shanghai Jiao Tong University, China. His research interests include the qualitative, bifurcation, and integrability theories of ordinary differential equations and dynamical systems. He has published more than 160 papers and three books (one in Springer) in these fields. He received his Ph.D. in 1997 from Nanjing University, China, had worked at Georgia Institute of Technology for one year, and at Universitat Autònoma de Barcelona for three years. Currently he is a member of the European Academy of Sciences and Arts and the Director of the Chinese Society of Singular Perturbations and of the Chinese Society of Mathematics. He is serving as an associate editor of QTDS and IJBC, and is a member of editorial boards of some other journals.

