

The Geometry of Monopoles: New and Old

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Nonabelian magnetic monopoles have been objects of fascination for nearly 30 years and studied from many perspectives. This lecture course will review some of this work focusing on the geometry of $\mathfrak{su}(2)$ BPS monopoles in particular. We will recall what monopoles are and some of the descriptions of BPS monopoles: the Nahm equations and Nahm transform; monopoles and spectral theory; monopoles as the rational maps of Donaldson and Jarvis. Hitchin's spectral curve will be discussed in some detail as this makes the connection to the geometry of integrable systems rather clear. Some new results and outstanding problems will be presented.