

On the Construction of Monopoles

Hary Braden

School of Mathematics and Maxwell Institute University of Edinburgh
Peter Guthrie Tait Road, Edinburgh
Scotland, UK
hwb@staffmail.ed.ac.uk

Although the study of BPS monopoles is now over 30 years old there are still few analytic results known for the Higgs and gauge fields. For $\text{su}(2)$ monopoles without spherical or axial symmetry the only known results are for the Higgs field on the coordinate axes for charge 2. By combining integrable systems and twistor constructions we show how the problem becomes algebraic in an appropriate gauge. The approach will be illustrated by presenting the general charge 2 fields.