1039-53-131   **Neil M Donaldson*** (`ndonalds@uci.edu`), Department of Mathematics, University of California, Irvine, Irvine, CA 92697, and **Chuu-Lian Terng**. *Conformally flat submanifolds in spheres and integrable systems.*

We describe the link between conformally flat immersions in spheres with flat normal bundle and integrable systems, extending Hertrich-Jeromin's work on conformally flat hypersurfaces in S^4 and curved flats. We construct dressing, and in particular geometric Ribaucour transforms of these immersions. We also describe the moduli of these immersions and their loop group symmetries. (Received March 10, 2008)