1006-53-140 **Bo Dai*** (`bdai@math.uci.edu`), Department of Mathematics, 103 MSTB, University of California, Irvine, Irvine, CA 92697-3875, and **Chuu-Lian Terng** (`cterng@math.uci.edu`), Department of Mathematics, 103 MSTB, University of California, Irvine, Irvine, CA 92697-3875. *Soliton solutions of the self-dual Yang-Mills equation on $R^{2,2}$.*

The self-dual Yang-Mills equation on $R^{2,2}$ has a Lax pair and is an integrable system. We apply techniques from integrable systems to construct explicit self-dual $U(n)$ connections whose parallel frames are rational in the spectral parameter. I will also talk about results of Uhlenbeck, Terng and myself on some integrable systems coming from dimension reductions of the self-dual Yang-Mills equation, such as the modified $2+1$ chiral model, the 2D chiral model, and the $1+1$ wave maps. (Received February 11, 2005)