1035-35-993 **Masashi Hamanaka*** (hamanaka@math.nagoya-u.ac.jp), Nagoya, 464-8602, Japan. *Integrable systems and soliton theory on noncommutative spaces.*

I would like to talk about extension of integrable systems and soliton theory to non-commutative (NC) spaces, which is partially motivated by recent development of string theory. In particular, I would discuss integrable aspects of NC anti-sepf-dual Yang-Mills (ASDYM) equations from the viewpoint of NC twistor theory. I would present a Backlund transformation for NC ASDYM eq. which yields various exact (Atiyah-Ward ansatz) solutions including NC instantons and NC non-linear plane waves. We have found that a kind of NC determinants, the quasideterminants (for a good survey, see [Gelfand and Retakh et. al, arXiv:math/0208146]), play crucial roles in construction of the solutions. This is based on collaboration with Claire R. Gilson and Jonathan J. C. Nimmo (Glasgow) [arXiv:0709.2069]. I would also give a relation [MH, hep-th/0601209] to lower-dimensional integrable equations such as NC KdV eq. and prove existence of infinite conserved equantities [MH, hep-th/0311206] and analyze asymptotic behavior of the exact N-soliton solutions [MH, hep-th/0610006]. (Received September 18, 2007)