

I will report on some new results of Fokas-Gelfand-Finkel-Liu. Surfaces immersed in Lie algebras can be characterized by the so called fundamental forms, whose coefficients satisfy a system of nonlinear PDEs, the Gauss-Mainardi-Codazzi-Ricci equations. For particular surfaces these PDEs are integrable equations. An explicit formula (apparently not known to the classical geometers of the XIXth century) is presented which associates with a given system of integrable nonlinear PDEs infinitely many surfaces immersed in Lie algebras. Time permitting, several important examples will be presented.