'A class of differential quadratic algebras and their symmetries.'

In this talk I will describe a multi-parametric family of non commutative quadratic algebras $\mathbf{A}_{\ell,p}$ generated (over a ground field $\mathbb{K}$) by degree-one elements x_μ, $\mu = 0, 1, 2, 3$, whose commutation relations depend on some parameters $\ell = (\ell_{\mu\nu})$ and $p = (p_{\mu\nu})$, $\mu, \nu = 0, 1, 2, 3$, obeying some minimal consistency conditions. The family of algebras $\mathbf{A}_{\ell,p}$ have well-known sub-families: with special classes of the parameters we can recover relevant algebras, notably Sklyanin algebras or the algebras of θ-planes and Connes–Dubois-Violette four-planes.
I will explain how to construct quantum groups of symmetries for the general algebras $\mathbf{A}_{\ell,p}$ and finite-dimensional differential calculi, covariant with respect to the symmetries.
Based on a joint work with Giovanni Landi.