Concentration compactness and nonlinear subelliptic problems without compactness

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An abstract version of concentration compactness on Hilbert spaces applies to to actions of Lie groups. Using the concentration-compactness argument we prove existence of solutions for semilinear problems involving sub-Laplacians on whole Lie groups and on their certain non-compact subsets. The main assumption on the group and the sub-Laplacian is compactness of Folland-Stein embedding in the local case. This is a joint work with Ian Schindler