

Alain Valette: Groups with the Haagerup property (4 lectures).

A locally compact group has the Haagerup property (or: is $\mathcal{A}$ -(T)-amenable) if it admits a proper affine isometric action on a Hilbert space. The Haagerup property is a weak form of amenability: the class of Haagerup groups contains amenable groups, but also free groups, Coxeter groups, closed subgroups of $SO(n,1)$ and $SU(n,1)$, etc... Quoting from the Wikipedia page: "The Haagerup property is interesting to many fields of mathematics, including harmonic analysis, representation theory, operator K-theory, and geometric group theory."

Here is a rough outline of the four lectures:

- 1) Unitary representations vs affine isometric actions; definitions and first examples.
- 2) Geometric characterizations; more examples.
- 3) Why do we care? A glimpse into the Baum-Connes conjecture.
- 4) Permanence properties of the class of Haagerup groups.