MARK HAMILTON, Mount Allison University
Convergence of polarization for Gelfand-Tsetlin systems

One of the earliest and most famous examples of "independence of polarization" in geometric quantization is the Gelfant-Tsetlin integrable system, introduced by Guillemin-Sternberg in 1982. They computed the dimensions of the Kahler and real quantizations by different arguments and showed they were equal.

In this talk I will describe an explicit correspondence between these two quantizations using a "convergence of polarizations" approach, as pioneered by Mourao, Nunes, and collaborators. This is a limiting process in which holomorphic sections (which can be seen as elements of the Kahler quantization) converge to distributional sections (which can be seen as elements of the real quantization). I will give an overview of this procedure for the case of "regular" fibres, and discuss some of the issues involved in its construction. I will also discuss work in progress to finish the story by finally tackling the case of "singular" fibres.

This is joint work with Hiroshi Konno and work in progress with Megumi Harada.