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**S. Merigon, H.K. Neeb and Gestur Olafsson\*** (olafsson@math.lsu.edu), Department of Mathematics, Louisiana State University, Baton Rouge, LA 70803. *Integrability of unitary representations on reproducing kernel spaces and reflection positivity.*

Let  $G$  be a connected Lie group, possibly infinite dimensional, with Lie algebra  $\mathfrak{g}$ . Let  $\tau : G \rightarrow G$  be non-trivial involution. Then  $\mathfrak{g}$  decomposes into eigenspaces  $\mathfrak{g} = \mathfrak{h} + \mathfrak{q}$  with respect to the derived involution. Let  $\mathfrak{g}^c = \mathfrak{h} + i\mathfrak{q}$  and let  $G^c$  be a simply connected Lie group with Lie algebra  $\mathfrak{g}^c$ . We will discuss new result, joint with S. Merigon and K-H. Neeb how to transform unitary representations from  $G$  to  $G^c$ . We will also describe some applications of those results in quantum field theory. (Received July 25, 2014)