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## Gauging the Maximal Compact Subgroup of a Simple Lie Group

*Monday 19 February 2024 16:00 (1 hour)*

Abstract: I will consider a class of theories where the gauge group  $K$  is the maximal compact subgroup of a non-compact simple group  $G$  (e.g.,  $K=U(1)$  and  $G=SU(1,1)$ ). The matter fields are fermions in a unitary representation of  $G$  which decomposes to an infinite sum of irreps of  $K$ . The Zeta-function method regularizes the infinite sum over the fermions in loop diagrams. Some of these gauge theories (even the abelian one!) are asymptotically free and have an IR stable fixed point. Could Quarks and leptons be bound states of such a gauge theory?

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