Composition series for spherical principle series in rank one

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In the case of a connected semisimple Lie group with finite centre we consider a specific class of representations, the so-called *spherical principal series representations*. These representations (together with the non-spherical ones) are of great importance since they lead to a classification of all unitary irreducible representations of G. In order to achieve this classification explicitly, one needs to describe the irreducible subrepresentations of the considered representations.

In the talk we will introduce these representations in the case of $G = \mathrm{SL}(2, \mathbb{R})$, describe some Lie-theoretic facts and definitions in this case, and illustrate a procedure to determine the irreducible subrepresentations.