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Toshiyuki Kobayashi*, Graduate School of Mathematical Sciences, The University of Tokyo, Komaba 3-8-1, Meguro, Tokyo, Japan. *A program for branching problems in the representation theory of real reductive groups — Classification problem of symmetry breaking operators*. Preliminary report.

A symmetry breaking operator is an intertwining operator that arises from branching problems of representations, that is, an H -intertwining operator from an (irreducible) representation of G to that of the subgroup H . It may be an integral operator, and may be a more singular one such as a differential operator, when representations are realized geometrically.

In general, it is a hard problem to classify symmetry breaking operators. We plan to discuss a criterion for the space of symmetry breaking operators to be finite-dimensional, and a classification scheme of symmetry breaking operators with some examples for orthogonal groups.

References

T. Kobayashi. A program for branching problems in the representation theory of real reductive groups. *Progr. Math.* 312, pp. 277-322, 2015.

T. Kobayashi, T. Kubo, and M. Pevzner, Conformal symmetry breaking operators for differential forms on spheres, *Lecture Notes in Math.*, 2170, Springer, 2016. viii+192 pages.

T. Kobayashi and B. Speh. Symmetry Breaking for Representations of Rank One Orthogonal Groups, *Memoirs of AMS.* 238. 2015. vi+118 pages

—. Symmetry Breaking for Representations of Rank One Orthogonal Groups II, *Lecture Notes in Math.* 2234, Springer, 2018. xv+342 pages. (Received September 15, 2019)