## SOME EXERCISES CONCERNING LOCALIZED VECTORS IN LOW RANK

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ABSTRACT. We record some exercises whose purpose is to verify that certain classes of vectors in representations of SO(3) and  $PGL_2(\mathbb{R})$  are "localized" in a strong sense under the action of those groups.

## 1. Overview

The purpose of this note is to record some exercises that aim to convey some computational feeling for "localized vectors" in the precise sense defined in §3 of this note, focusing on low-rank examples.

We let  $T\to\infty$  be an asymptotic parameter, and retain the asymptotic notation and conventions of §2.1 of this note concerning "T-dependent elements", "fixed" and "classes".

## References