Hidden vortex lattices in a thermally paired superfluid EGOR
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NTNU Trondheim — We study the evolution of rotational response of a two-
component superfluid mixture with intercomponent drag interaction, as the sys-
tem undergoes a transition into a paired phase at finite temperature. We find that
the transition into a paired state manifests itself in a change of (i) vortex lattice
symmetry, and (ii) nature of vortex state. Instead of a usual vortex lattice, the
system forms a highly disordered vortex tangle which constantly undergoes merger
and reconnecting processes involving different types of vortices, with a breakdown of
translational symmetry only in a statistical sense. We discuss how it can complicate
an observation of a paired bosonic state via rotational response.

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