Info

This note, that was found here, as a part of a collection
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Vector fields on S^2

(Cannot comb a hairy 2-sphere) Every continuous tangent vector field on S^2 has a zero.

We consider vector fields on S^2 and their flows.

- As S^2 is **compact**, every vector field is **complete** $\iff$ flows are always complete $\iff$ every flow is a smooth $\mathbb{R}$-action
- By

  > **(Cannot comb a hairy 2-sphere)** Every continuous tangent vector field on S^2 has a zero.

  every vector field has a zero $\iff$ every flow has a fixed point.

Current note has 0 direct children and 0 total descendants.

- stretchy
  - S^2 and $\mathbb{C}\boldsymbol{P}^1$
    - Vector fields on S^2

And it has 10 siblings.

- stretchy
  - S^2 and $\mathbb{C}\boldsymbol{P}^1$
    - Almost complex structure on S^2 induced from spherical metric and its area form
    - Borsuk-Ulam theorem
    - Cylindrical coordinates on S^2
    - Holomorphic vector bundles on $\mathbb{C}\boldsymbol{P}^1$
    - Round metric on S^2
    - The area form on round S^2
    - Stereographic coordinates on the sphere S^2
    - TS^2
    - Vector fields on S^2
    - Hamiltonian flows on the sphere S^2