Poincaré's Last Geometric Theorem

Undergraduate Math Club
CORNELL UNIVERSITY

Speaker

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ABSTRACT

Poincaré's Last Geometric Theorem states that if $T : A \to A$ is any any area-preserving homeomorphism of the annulus A which "twists" the inner and outer boundaries of A in opposite directions, then T has at least two fixed points. Poincaré was originally interested in this result because it implies the existence of periodic orbits in the three body problem. He proved several special cases of the theorem via intuitive geometric arguments, however later complete proofs lost much of this geometric flavor. We extend Poincaré's argument to the general case of the theorem, while maintaining strong emphasis on his original geometric constructions. Joint work with Professor John Hubbard.

October 12th at 5:15pm

Zoom ⋆ No Refreshments