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Abstracts of Short Communications and Posters

Section:

6. Topology

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Unicity of the topological type of the simply connected manifolds

Three independant proofs of the theorem in the title, as conjectured by Poincaré.

The first proof splits the 3-manifold in blocks by parallel sections, followed by soldering of them in a 3-sphere.

The second proof utilities a Heegard splitting of the 3-manifold, a line on the dividing surface with linking numbers zero regarding one handlebody, a particular 3-disc bounded by it, and with this deduces a Heegard splitting inferior genus.

The third proof determines a particular simplicial map of S^3 onto M^3 and smoothes it in a homeomorphism by iterate smoothing the prototypes of the dual cells of the triangulation. It utilises the Fox characterization of the 3-spherical parts.

The second and the third proof utilise the Dehn Lemma.