

第04回 Tejas Kalelkar

- 講演者: Tejas Kalelkar 氏 (Indian Institute of Science Education and Research, Pune)
 - 題目: [Taut foliations in compact 3-dimensional manifolds with constrained boundary slopes](#)
 - 日時: 2018年 6月 1日 (金) 16:30 ~ 17:30
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[seminar, 2018](#)

abstract

Every 3-dimensional manifold has a foliation by 2-dimensional manifolds (called leaves). A foliation is called taut if there exists a simple closed curve in the manifold that intersects each leaf of the foliation transversally. A surface bundle over a circle is the simplest example of a 3-manifold with a taut foliation by compact leaves. Every 3-manifold can be obtained from such a surface bundle by Dehn filling the boundary components, ie, by sticking a solid torus to the torus boundaries. We have proved that the fiber structure of a surface bundle can be perturbed to taut foliations realizing all rational boundary slopes in a neighbourhood of the the boundary slopes the fiber. This allowed us to prove that 3-manifolds obtained by Dehn-filling a surface-bundle along slopes sufficiently close to the slopes of the fiber produce closed 3-manifolds that contain taut foliations close to the standard foliation of the surface-bundle. In other words, closed 3-manifolds that are near closed surface bundles (in terms of the Dehn-filling slopes) also have taut foliations. This is a generalization of a result of Rachel Roberts to compact manifolds with disconnected boundary, and is also joint work with her.



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10 images

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