

PhD research topic proposal (template)

BME, Doctoral School of Mathematics and Computer Science

Name and degree of supervisors : Csima Géza Ph.D.

Are you willing to supervise Stipendium Hungaricum applicants?

Yes

Title of the topic: Interpretation of classical geometric problems in Thurston geometries

Short description:

There are 8 homogeneous 3 dimensional so-called Thurston geometries:

$$\mathbf{E}^3, \mathbf{H}^3, \mathbf{S}^3, \mathbf{S}^2 \times \mathbf{R}, \mathbf{H}^2 \times \mathbf{R}, \widehat{\mathbf{Sl}}_2\mathbf{R}, \mathbf{Nil}, \mathbf{Sol}$$

There are some known results, like the isometry groups, metric tensors, geodesic and translation curves, internal angle sums of triangles, etc...

The goal of this PhD program is to find good questions (e.g. trigonometry) that can be generalized to all of these geometries and answer these problems.

Requirements:

Contact:

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Place of work:

BME, MI, Department of Algebra and Geometry