

PUBLIC LECTURE EVALUATION

Masaryk University

Faculty

Procedure field

Applicant

Lecture date

Lecture topic

Persons present
(number)

Designated evaluators
(board members)

Faculty of Science

Mathematics - Geometry

Mgr. Vojtěch Žádník, Ph.D.

September 16, 2020

Geometric constructions old and new: from local coordinate manipulation to general extension functor and back again

23 (see attached list of attendees)

Prof. RNDr. Josef Janyška, DSc.

Prof. RNDr. Vladimír Souček, DrSc.

Prof. RNDr. Miroslav Doupovec, CSc.

The candidate began his lecture with an overview of the problems he wants to solve and the methods used. As a motivational example, he used the standard flat geometries. He highlighted the differences between various types of (flat) geometries (Euclidean, affine, equi-affine, projective, conformal) and their curved variants in which the tensorial computation is the classical tool.

In the second part of the lecture, he presented different types of geometries as Cartan geometry given by the Cartan bundle and the Cartan connection. For many geometric structures, there is a unique Cartan connection that encodes the structure and satisfies a (natural) normalization condition. He presented methods used in the Cartan geometries, namely construction of Fefferman type, general extension,

In the last part of the lecture, he presented the results concerning Patterson–Walker metrics, ambient metrics, CR-hypersurfaces, and chains.

The lecturer presented the results briefly and clearly.

All members of the committee evaluated the public lecture. Slide formatting and oral presentation were at a high level and presented in a clear form that was understandable not only by the experts in the field but also by all broad audience. During the follow-up discussion after the lecture, Dr. Žádník responded to all comments and questions.

Conclusion

The lecture delivered by Vojtěch Žádník, entitled “Geometric constructions old and new: from local coordinate manipulation to general extension functor and back again”, as part of the habilitation procedure, **demonstrated** sufficient scholarly qualifications and pedagogical capabilities expected of applicants participating in a habilitation procedure in the field of Mathematics – Geometry.

Date: September 16, 2020

Josef Janyška

Vladimír Souček

Miroslav Doupovec