

I. Personal and study details

Student's name: **Šimák Martin**

Personal ID number: **483523**

Faculty / Institute: **Faculty of Electrical Engineering**

Department / Institute: **Department of Radioelectronics**

Study program: **Open Electronic Systems**

Branch of study: **Open Electronic Systems**

II. Bachelor's thesis details

Bachelor's thesis title in English:

Connections on Differentiable Manifolds

Bachelor's thesis title in Czech:

Konexe na diferencovatelných varietách

Guidelines:

The shape of geometry of a differentiable manifold is given only after specifying an affine connection, or, equivalently, a covariant derivative. In the thesis, the basic ways of endowing a manifold with this additional structure will be investigated. The core of the thesis will focus on the relationship among various ways of specifying a connection. The style and presentation of the thesis will be theoretical, maintaining mathematical standards.

Bibliography / sources:

- [1] Theodore Frankel, The geometry of physics: An introduction, 3rd ed, Cambridge University Press, 2011.
- [2] Jeffrey M. Lee, Manifolds and differential geometry, American mathematical Society, 2009.
- [3] Jozsef Szilasi, David Cs Kertesz, Rezso L. Lovas, Connections, sprays and Finsler structures, World Scientific Publishing Company, 2013.

Name and workplace of bachelor's thesis supervisor:

doc. RNDr. Jiří Velebil, Ph.D. Department of Mathematics FEE

Name and workplace of second bachelor's thesis supervisor or consultant:

Date of bachelor's thesis assignment: **19.01.2022** Deadline for bachelor thesis submission: **20.05.2022**

Assignment valid until: **30.09.2023**

doc. RNDr. Jiří Velebil, Ph.D.
Supervisor's signature

doc. Ing. Stanislav Vítek, Ph.D.
Head of department's signature

prof. Mgr. Petr Páta, Ph.D.
Dean's signature

III. Assignment receipt

The student acknowledges that the bachelor's thesis is an individual work. The student must produce his thesis without the assistance of others, with the exception of provided consultations. Within the bachelor's thesis, the author must state the names of consultants and include a list of references.

Date of assignment receipt

Student's signature