

Some suggestions of references in science (books, articles, videos,... in mathematics and physics)

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2021, february, 15

fichier: notes/biblio/Livres_for_students.lyx

Where to get books:

- z-lib.org
- libgen

Remark 0.1. It is important to read books adapted to our level and knowledge. Reading a book, we must feel pleasure to learn and understand with ease. If not, try another book, and may be come back later.

0.1 Videos

- YMONKA/playlists : chaine youtube en francais niveau lycée.
- E-learning physique : chaine youtube en francais sur la physique, niveau classes préparatoires.
- Richard E. BORCHERDS 'videos in mathematics: english channel about algebra (advanced level in mathematics).

Part I

Mathematics

1 Arithmetics, Algebra

- Joseph Gallian. *Contemporary abstract algebra*. Nelson Education, 2012
 - Joseph A Gallian. *Student Solutions Manual: Contemporary Abstract Algebra, Gallian*. Brooks/Cole Cengage Learning, 2010

2 Number theory

3 Linear Algebra

- L.N. Trefethen and M. Embree. *Spectra and pseudospectra*. Princeton University Pr., 2005
 - Highly recommended book, about (pseudo)spectrum of matrices.
- I. Gohberg, S. Goldberg, and N. Krupnik. *Traces and Determinants of Linear Operators*. Birkhauser, 2000
 - Specialized book. Level: master
- D Serre. Matrices theory and applications second edition. *Graduate Texts in Mathematics*, 1(216):ALL–ALL, 2010

4 Analysis

5 Complex analysis

Ahlfors

6 Functional analysis, PDE, distributions

- M. Taylor. *Partial differential equations, Vol I*. Springer, 1996
 - This book is a good introduction for PDE in relation with differential geometry and applications in physics.
- M. Reed and B. Simon. *Mathematical methods in physics, vol I : Functional Analysis*. Academic press, New York, 1972
 - This book is an introduction for functional analysis.

7 Ordinary differential equations, dynamical systems

- V.I. Arnold. *Les méthodes mathématiques de la mécanique classique*. Ed. Mir. Moscou, 1976
 - This book is an introduction for Hamiltonian dynamics and symplectic geometry. Level: licence/master.

8 Numerical analysis

9 Fonctional analysis, spectral theory

10 Differential geometry

- M. Dillard-Bleick Y. Choquet-Bruhat, C. Dewitt-Morette. *Analysis, manifolds and physics*. North-Holland, 1982
 - This book covers a wide aspects of mathematics in relation with physics. Level: master.

11 Probabilities

12 Semi-classical analysis

13 Group theory

14 Topology

Part II

Physics

Références

- [Arn76] V.I. Arnold. *Les méthodes mathématiques de la mécanique classique*. Ed. Mir. Moscou, 1976.
- [Gal10] Joseph A Gallian. *Student Solutions Manual : Contemporary Abstract Algebra, Gallian*. Brooks/Cole Cengage Learning, 2010.
- [Gal12] Joseph Gallian. *Contemporary abstract algebra*. Nelson Education, 2012.
- [GGK00] I. Gohberg, S. Goldberg, and N. Krupnik. *Traces and Determinants of Linear Operators*. Birkhauser, 2000.
- [RS72] M. Reed and B. Simon. *Mathematical methods in physics, vol I : Functional Analysis*. Academic press, New York, 1972.

- [Ser10] D Serre. Matrices theory and applications second edition. *Graduate Texts in Mathematics*, 1(216) :ALL–ALL, 2010.
- [Tay96] M. Taylor. *Partial differential equations, Vol I*. Springer, 1996.
- [TE05] L.N. Trefethen and M. Embree. *Spectra and pseudospectra*. Princeton University Pr., 2005.
- [YCB82] M. Dillard-Bleick Y. Choquet-Bruhat, C. Dewitt-Morette. *Analysis, manifolds and physics*. North-Holland, 1982.