

## References

- [1] B. Assmann, Technische Mechanik, Band 1: Statik, München, Wien: R. Oldenbourg Verlag, 1984.
- [2] B. Assmann, Technische Mechanik, Band 2: Festigkeitslehre, München, Wien: R. Oldenbourg Verlag, 1979.
- [3] B. Assmann, Technische Mechanik, Band 3: Kinematik und Kinetik, München, Wien: R. Oldenbourg Verlag, 1985.
- [4] D. Besdo, B. Dirr, B. Heimann, K. Popp, I. Teipel, Formelsammlung zu Technische Mechanik I-IV, Institute of Mechanics, University of Hannover.
- [5] D. Besdo, B. Dirr, B. Heimann, K. Popp, I. Teipel, Collection of Examination Exercises I-II, Institute of Mechanics, University of Hannover.
- [6] D. Besdo, B. Dirr, B. Heimann, K. Popp, I. Teipel, Collection of Examination Exercises III-IV, Institute of Mechanics, University of Hannover
- [7] Beitz, W.; Küttner, K.-H. (Herausgeber): Dubbel, Taschenbuch des Maschinenbaus, 15. Auflage, Berlin, Heidelberg, New York, Tokyo: Springer Verlag, 1986.
- [8] Euler, L., Theorie der Bewegung fester oder starrer Körper (Theoria motus corporum solidorum seu rigidorum), Greifswald: C. A. Koch's Verlagsgesellschaft, 1853.
- [9] H. Göldner, F. Holzweißig, Leitfaden der Technischen Mechanik: Statik, Festigkeitslehre, Kinematik, Dynamik, Darmstadt: Steinkopff Verlag, 1984.
- [10] H. Göldner, D. Witt, Lehr- und Übungsbuch Technische Mechanik, Band 1: Statik und Festigkeitslehre, Fachbuchverlag Leipzig Köln, 1993
- [11] D. Gross, W. Hauger, W. Schnell, Technische Mechanik, Band 1: Statik, Berlin, Heidelberg: Springer Verlag, 1988.
- [12] W. Hauger, W. Schnell, D. Gross, Technische Mechanik, Band 3: Kinetik, Berlin, Heidelberg: Springer Verlag, 1986.
- [13] G. Holzmann, H. Meyer, G. Schumpich, Technische Mechanik, Teil 1: Statik, Stuttgart: Teubner Verlag, 1990.
- [14] G. Holzmann, H. Meyer, G. Schumpich, Technische Mechanik, Teil 2: Kinematik und Kinetik, Stuttgart: Teubner Verlag, 1986.

- [15] G. Holzmann, H. Meyer, G. Schumpich, Technische Mechanik, Teil 3: Festigkeitslehre, Stuttgart: Teubner Verlag, 1983.
- [16] Istituto Geographico de Agostini S. p. A., da Vinvi, L., Das Lebensbild eines Genies, Wiesbaden, Berlin: Emil Vollmer Verlag.
- [17] K.-D. Klee, Elastostatik, Lecture Manuscript, University of Applied Science Hannover, 1. Auflage, 1994.
- [18] K. Magnus, H. H. Müller, Grundlagen der Mechanik, Stuttgart: Teubner-Verlag, 1990.
- [19] E. Mönch, Basic Lecture about Mechanics, Munich, Vienna: R. Oldenbourg Verlag, 1981
- [20] Newton, I., Mathematische Prinzipien der Naturlehre, mit Bemerkungen und Erläuterungen von Prof. Dr. J. Ph. Wolfers, Berlin, Verlag von Robert Oppenheim, 1872.
- [21] Pestel, E., Technische Mechanik, Band 1: Statik, Mannheim, Wien, Zürich: BIVerlag, 1982.
- [22] E. Pestel, J. Wittenburg, Technische Mechanik, Band 2: Festigkeitslehre, Mannheim, Wien, Zürich: BI Verlag, 1983.
- [23] E. Pestel, Technische Mechanik, Band 3: Kinematik und Kinetik, Mannheim, Wien, Zürich: BI Verlag, 1988.
- [24] Ritter, A., Theorie und Berchnung eiserner Dach- und Brücken-Konstruktionen, Hannover: Carl Rümpler, 1863.
- [25] Ritter, A., Lectures about Mechanics, 1860.
- [26] W. Schnell, D. Gross, W. Hauger, Technische Mechanik, Band 2: Elastostatik, Berlin, Heidelberg: Springer Verlag, 1989.
- [27] I. Szabó, Repetitorium und Übungsbuch der Technischen Mechanik, Berlin, Göttingen, Heidelberg: Springer Verlag, 1963.
- [28] I. Szabó, Einführung in die Technische Mechanik, Berlin, Heidelberg, New York: Springer Verlag, 1975.
- [29] I. Szabó, Geschichte der mechanischen Prinzipien, Basel, Boston, Stuttgart: Birkhäuser Verlag, 1987.
- [30] Epstein, Lewis Caroll: Thinking Physics. Practical Lessons in Critical Thinking, Insight Press, San Francisco
- [31] D. Labuhn, O. Romberg: Keine Panik vor Thermodynamik!, Verlag Vieweg, 2005
- [32] J. Strybny: Ohne Panik Strömungsmechanik!, Verlag Vieweg, 2003
- [33] Telephone Book of Maui, Hawaii (incl. classified directory), Edition 2006

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