



Hanno Essén

Universitetslektor, Department of Mechanics, KTH
Docent, Theoretical Physics, Stockholm University

I am senior lecturer (associate professor) at the Department of Mechanics, KTH, Stockholm, Sweden. I am also Director of undergraduate studies (studierektor) and Chairman of the Swedish Skeptics (Föreningen [Vetenskap och Folkbildning, VoF](#)).

[Bild på några styrelsemedlemmar i VoF. Hanno längst till höger.](#)

Administration, course info, and pedagogics:

[SG2150, Rigid Body Dynamics](#) (formerly: Analytical Mechanics)

[SG1109 för II \(Mekanik för I\)](#)

[Mekanik II, 5C1140,\(gamla tentor med lösningar mm\)](#)

[Kandidatarbete i Mekanik](#)

[SG2127, Research Methods in Mechanics \(from 2009 this course is taken over by Jenny Brandefelt](#)

[Om betyg och komplettering på SG1102, SG1109, SG1113, SG1130, SG1131, SG1140](#)

[Om betyg, komplettering och ECTS-betyg, på 5C1107 \(S2\)](#)

[Mekaniks evalveringsregler,](#)

[Various lecture notes and manuscripts \(pdfs\)](#)

Research and professional:

I have done research in many different areas over the years and remain fairly unspecialized. A main theme in recent year has been the role of magnetic interaction energy in plasmas and superconductivity. I am interested in all areas of science but a main theme has been to improve the clarity and conceptual simplicity of our understanding of some areas of physics and theoretical chemistry. Here is a list of topics:

Theoretical chemistry: The Born-Oppenheimer separation, Vibration-Rotation coupling, Electronic structure theory, Hund's rules, The Thomas-Fermi approximation, the Periodic table.

General relativity: Scalar gauge theory of GR, Curvature, Kaluza-Klein ideas.

Classical mechanics: Non-holonomic dynamics, Angular velocity, Rotation of non-rigid systems, Separability.

Electromagnetic theory: The nature of magnetism, The Darwin Hamiltonian with applications to plasmas and superconductivity. See link below!

Pedagogical and popular accounts of physics.

For further information, see links:

[Vita](#)

[Lists of Publications \(publikationslistor\)](#)

[Superconductivity, Plasmas and the Darwin Hamiltonian](#)

[Evclid](#): a geometric calculator and editor mainly intended for work with molecular geometries, with [Guide \(pdf\)](#).

Private:

[Dikter \(Poems\)](#)

You can reach me by e-mail at: hanno@mech.kth.se