Per Amund Amundsen
Department of Mathematics and Natural Science
UNIVERSITY OF STAVANGER

Set 4. Exercises for 15. September 2017

Problem 21: Prove the result of *Goldstein* derivation 1.8 from Hamilton's principle, instead of by a direct substitution in the Lagrange equations.

Problem 22: *Goldstein*, derivation 2.4. [Hint: There is no loss of generality in choosing smart coordinates for the initial point of the curve.]

Problem 23: *Goldstein*, exercise 2.19.

Problem 24: *Goldstein*, exercise 2.18.

Problem 25: *Goldstein*, exercise 2.11.