

**SF3674 DIFFERENTIAL GEOMETRY,
GRADUATE COURSE, FALL 2016,
READING INSTRUCTIONS AND EXERCISES**

MATTIAS DAHL, HANS RINGSTRÖM

LECTURE 5, TUESDAY OCTOBER 4

Reading instructions. This lecture was devoted to a proof of the fact that semi-Riemannian manifolds of the same dimension, index and constant curvature are isometric (assuming that they are geodesically complete, connected and simply connected). The material for the lecture is Chapter 8 of O'Neill's book [1].

Exercises.

- (1) O'Neill [1] problems 8.2, 8.3, 8.6 and 8.7 (p. 232).

REFERENCES

- [1] Barrett O'Neill. *Semi-Riemannian geometry*, volume 103 of *Pure and Applied Mathematics*. Academic Press, Inc. [Harcourt Brace Jovanovich, Publishers], New York, 1983. With applications to relativity.