# Conventions

Apart from the first lecture, we will use units in which the speed of light is one: $c = 1$.

We will use "abstract indices" $a, b, c$ etc to denote tensors, e.g. $V^a$, $g_{cd}$. Equations involving such indices are basis-independent. Greek indices $\mu, \nu$ etc refer to tensor components in a particular basis. Equations involving such indices are valid only in that basis.

We will define the metric tensor to have signature $(-+++)$, which is the most common convention. Some authors (e.g. Stewart) use signature $(+---)$.

Our convention for the Riemann tensor is such that the Ricci identity takes the form

$$\nabla_a \nabla_b V^c - \nabla_b \nabla_a V^c = R^c{}_{dab} V^d. \tag{1}$$

Some other authors define the Riemann tensor with the opposite sign.