Contents

0.1 Symmetric and antisymmetric tensors

Consider a tensor, e g T_{abc}.

In general, this is not symmetric, that is:

$T_{abc} \neq T_{bac}$

0.1.1 Symmetric part of a tensor

We can write the symmetric part of this with regard to a and b.

$T_{(ab)c} = \frac{1}{2}(T_{abc} + T_{bac})$

Clearly, $T_{(ab)c} = T_{(ba)c}$

0.1.2 Antisymmetric part of a tensor

We can also have an an antisymmetric part with regard to a and b.

$T_{[ab]c} = \frac{1}{2}(T_{abc} - T_{bac})$

Clearly, $T_{[ab]c} = -T_{[ba]c}$

0.1.3 Tensors as sums of their symmetric and antisymmetric parts

$T_{(ab)c} + T_{[ab]c} = \frac{1}{2}(T_{abc} + T_{bac}) + \frac{1}{2}(T_{abc} - T_{bac})$

$T_{(ab)c} + T_{[ab]c} = T_{abc}$