

## TRACE OF METRIC TENSOR

Link to: [physicspages home page](#).

To leave a comment or report an error, please use the auxiliary blog and include the title or URL of this post in your comment.

Post date: 23 June 2021.

A specific case of the trace of a tensor is the trace of the metric tensor, which is given by  $g_{ij}g^{ij}$ . Since  $g^{ij}$  is the inverse of the metric tensor  $g_{ij}$ ,  $g_{ik}g^{kj} = \delta_i^j$  is the identity matrix, which means it is diagonal with every diagonal element equal to 1. The trace of the identity matrix is simply  $n$ , the dimension of the matrix. Thus in 2-d it would be  $n = 2$  and so on.