Contents

0.1 Metric-preserving transformations and isometry groups

If we have a bilinear form we can write the form as:

$u^T M v$

After a transformation P to the vectors it is:

$(Pu)^T M (Pv)$

$u^T P^T M P v$

So the value of the metric will be unaffected if:

$u^T P^T M P v = u^T M v$

$P^T M P = M$

0.1.1 Equivalent metrics

Different metrics can produce the same group. For example multiplying the metric by a constant.

$P^T M P = M$