Chapter 1

Dimension Reduction in Symmetric Spaces

In this chapter PGA procedures and their computations for data in three types of manifolds, the space of positive definite matrices, the special orthogonal group and the unit spheres, are specified and analyzed.

1.1 The Space of Positive Definite Matrices, $P(n)$

1.1.1 Geometry of $P(n)$

A real symmetric matrix . . .