

## Positive Semidefinite Cone

## Why

The set of positive semidefinite matrices has an attractive geometric structure.

## Main Result

**Proposition 1.**  $\mathbf{S}_{+}^{d}$  is a convex, pointed, closed cone with interior  $\mathbf{S}_{++}^{d}$  relative to  $\mathbf{S}^{d}$ .

The cone of positive definite matrices is open.

<sup>&</sup>lt;sup>1</sup>Future editions will contain a proof, which is by first principles.

