# PHY2506
# Atmospheric Data Assimilation
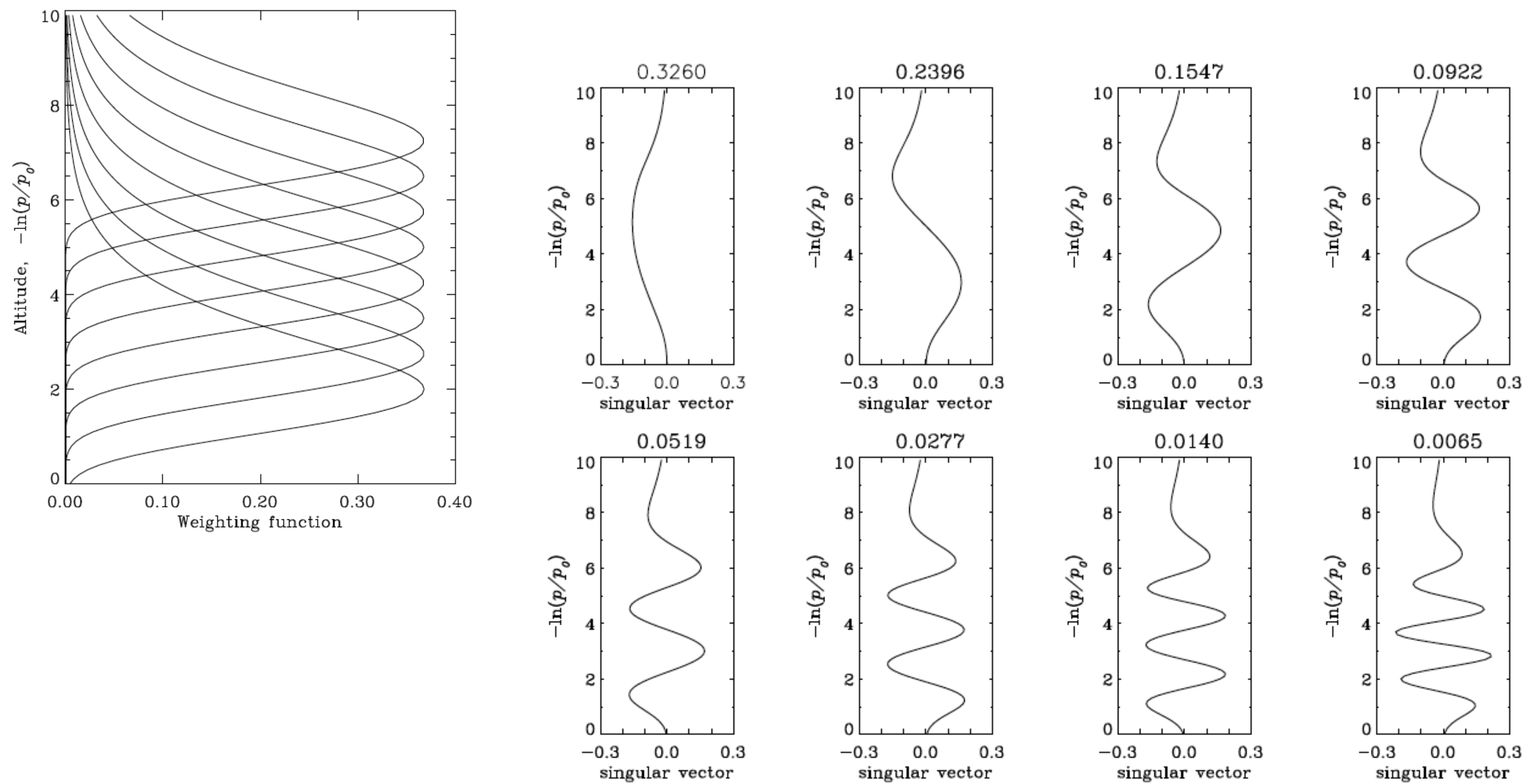
## Lecture 4

Supplementary Slides

Fig. 2.2   The singular vectors of the weighting functions of Figure 1.1. The corresponding singular values are given above each panel.
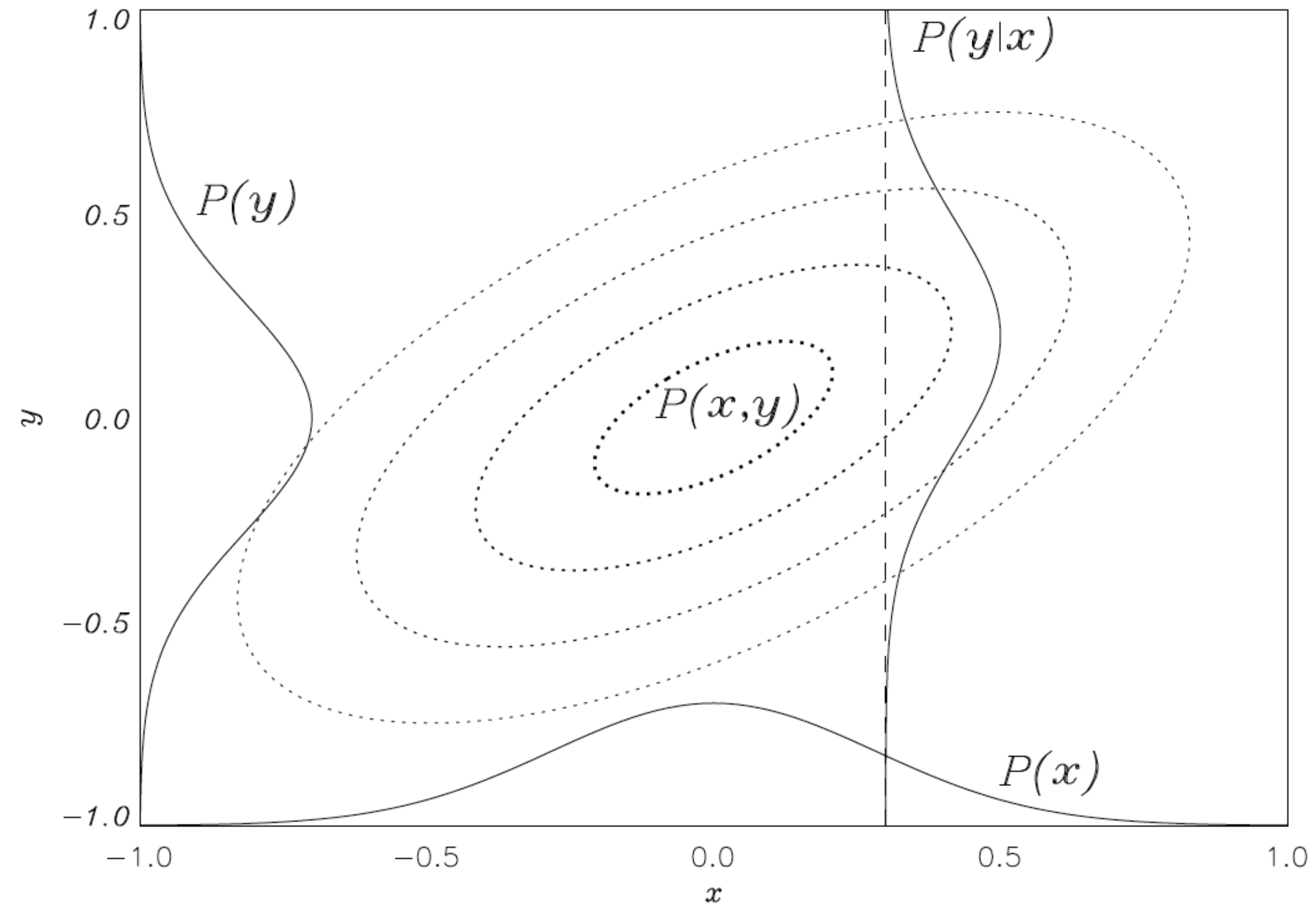
[Rodgers, 2000]

Fig. 2.3 Illustrating Bayes' theorem for a two-dimensional case.

[Rodgers, 2000]

$K^T S_\epsilon^{-1} K$
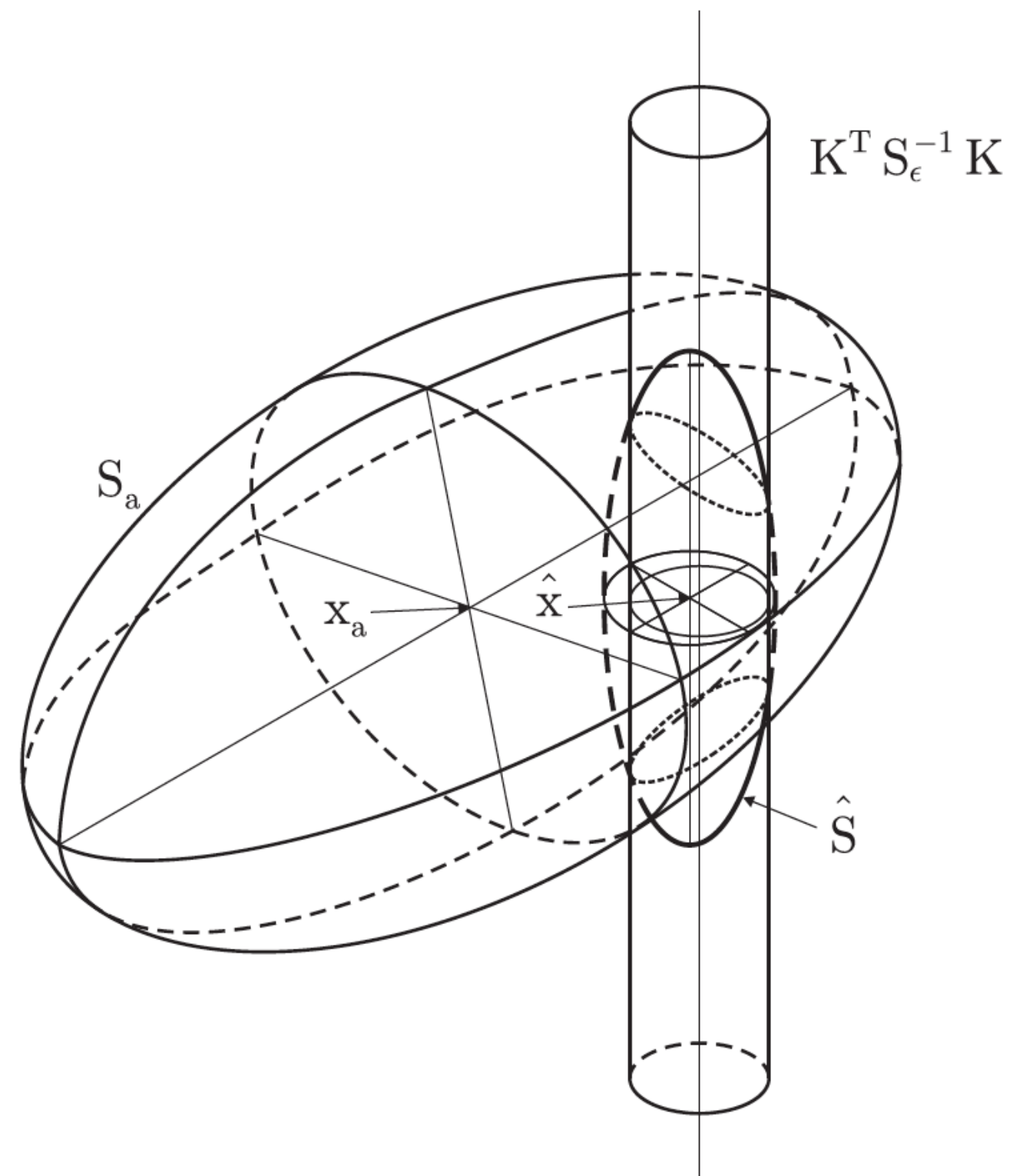
$S_a$

$x_a$

$\hat{x}$

$\hat{S}$

Fig. 2.4   Illustrating the relationship between the prior state estimate, the measurement mapped into state space, and the posterior estimate, for a three-dimensional state space and a two-dimensional measurement space. The large ellipsoid is a contour of the prior *pdf*, the cylinder is a contour of the *pdf* of the state given only the measurement, and the small ellipsoid is a contour of the posterior *pdf*.

[Rodgers, 2000]