

Part II

A Generalization of Convex Sets

Chapters 6 and 7 give a comprehensive presentation of the theory of quasi-convex (q.c.) and strictly quasi-convex (s.q.c.) sets, which retain the desirable properties of convex sets listed at the beginning of Chap. 4.

Chapter 8 develops *deflection*-sufficient conditions for the strict quasi-convexity of a set, which are then applied to the case of the attainable set of a nonlinear least squares problem.

The presentation of s.q.c sets given there is different – and hopefully more natural – than that in the original material [20, 19, 28]. These chapters can be read independently of the rest of the book if one is interested in the projection on nonconvex sets in Hilbert spaces.