

# On the Procrustean analogue of individual differences scaling (INDSCAL)

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Individual Differences Scaling (INDSCAL) is concerned with analysing and comparing the difference between multidimensional scaling solutions pertaining to the same  $n$  stimuli observed for  $K$  individuals. Originally developed in the psychometric literature to explain the relationship between subjects' differential cognition of a set of stimuli, INDSCAL has found applications in various disciplines, ranging from the social sciences to chemometrics. In this talk, INDSCAL is revisited, considering INDSCAL as being embedded within a hierarchy of individual difference scaling models. We explore the members of this family, distinguishing (i) models, (ii) the role of identification and substantive constraints, (iii) criteria for fitting models and (iv) algorithms to optimise the criteria. Model formulations may be based either on data that are in the form of proximities or on configurational matrices. In its configuration version, individual difference scaling may be formulated as a form of generalized Procrustes analysis. Algorithms are introduced for fitting the reformulated models. An application from sensory science illustrates the performance of the methods and their solutions.