

## ON THE GEOMETRY OF INFLUENCE ANALYSIS

FRANK CRITCHLEY

DEPARTMENT OF STATISTICS, THE OPEN UNIVERSITY, MILTON KEYNES, UK  
*E-mail address:* F.Critchley@open.ac.uk

Broadly conceived, influence analysis studies how relevant perturbations of statistical problems affect specified results. Distinguished (a) infinitesimal from finite perturbations and (b) perturbations applied to the empirical distribution from those, in a parametric context, applied to the log-likelihood yields the  $2 \times 2$  classification:

	$\hat{F}$	$l(\theta)$
local	Hampel (1974)	Cook (1986)
global	Critchley et al. (2001)	

This talk reviews work in the three sub-areas of influence analysis accessible via the papers shown, before describing developments in the fourth. Geometric considerations are emphasised throughout.

### REFERENCES

- [1] Cook R. D. (1986) Assessment of local influence (with Discussion), *J. Roy. Statist. Soc. B*, **48**: 133-169.
- [2] Critchley F., Atkinson R. A., Lu G. and Biazzi E. (2001) Influence analysis based on the case sensitivity function, *J. R. Statist. Soc. B*, **63**: 307-323.
- [3] Hampel F. R. (1974) The influence curve and its role in robust estimation, *J. Amer. Statist. Assn.*, **69**: 383-393.