Receptor modelling: set of techniques for determining emission sources and their contributions to ambient particulate concentrations at specific receptor sites. Based on the assumption of mass conservation and the fact that mass balance can be used to identify and apportion sources of airborne particulate matter in the atmosphere (Hopke, 1985; 1991; Henry, 1991).

Name	Abbreviation	Definition	Software	Use	Examples
Cluster Analysis	CA	Multivariate statistical classification of a dataset which maximises the similarity between cases of the same cluster and minimises the similarity between clusters	Statistical packages	Worldwide	Avila & Alarcón, 1999 Rodríguez et al., 2003
Factor Analysis	FA	Multivariate technique for reducing matrices of data to their lowest dimensionality by the use of orthogonal factor space and transformations that yield predictions and/or recognisable factors	Statistical packages	Worldwide	
Principal Component Analysis	PCA	Most common form of FA. Results calculated using an eigenvector analysis of a correlation matrix	Statistical packages	Europe-USA	Thurston & Spengler, 1985 Rodríguez et al., 2003 Salvador et al., 2003
Multiple Linear Regression	MLR	Relates the aerosol mass to the composition of certain tracer elements from the sources contributing in the aerosol samples	Statistical packages	Worldwide	Groblicki et al., 1981 Chan et al., 1999a
Target Transformation Factor Analysis	TTFA	Relates the value of factor loadings derived from FA to the value of mass fraction in physical source emissions	FANTASIA (Factor Analysis To Apportion Sources In Aerosols)	USA	Hopke, 1989 Chan et al., 1999b

Name	Abbreviation	Definition	Software	Use	Examples
Lenschow approach		Based on the assumption that the levels and chemical composition of particulate matter at a traffic site result from the addition of the local influence of traffic on the adjacent street, the sources of the agglomeration (city background) and global sources with little contribution from the agglomeration (regional background).	Mathematical packages	Europe	Lenschow et al., 2001 John et al., 2004 Querol et al., 2004
Chemical Mass Balance	CMB	Model for assessing contributions of primary particles on the basis of known source compositions	CMB7 CMB8 Mathematical packages	Worldwide	Hopke & Song, 1997 US-EPA, 1990 Abu-Allaban et al., 2002 Sun et al., 2004
Source Apportionment by Factors with Explicit Restrictions	SAFER	Multivariate receptor model based on PCA and the self-modelling curve resolution technique (SMCR). Implements explicit physical constraints in estimating source compositions		USA	Kim, 1989 Henry and Kim, 1990 Kim and Henry, 1999
Positive Matrix Factorisation	PMF	Weighted least-squares fit with the known error estimates of the elements of the data matrix used to derive the weights. Non-negativity constraint	PMF2	Europe-USA	Paatero & Tapper, 1994 Paatero, 1997 Chueinta et al., 1999 Kuhlbusch et al., 2004 Ito et al., 2004
Multilinear Engine	ME	Technique for fitting multilinear and quasi-multilinear mathematical expressions or models to two-, three-, and many-dimensional data arrays	ME2	Europe	Paatero, 1999 Rae et al, 2002 Yli-Tuomi et al., 2003

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