

# Performance metrics for multivariable integrated evaluation

two modes of stats provided:

## M-variables

var-1  $[d_1][N]$

var-2  $[d_2][N]$

var-3  $[d_3][N]$

.....

var-M  $[d_M][N]$

Scalar fields  
and  
Individual  
vector fields

Group into

Normalize  
with rms of  
Reference



$$\begin{bmatrix} a_{11} & a_{12} & a_{13} & \cdots & a_{1N} \\ a_{21} & a_{22} & a_{23} & \cdots & a_{2N} \\ a_{31} & a_{32} & a_{33} & \cdots & a_{3N} \\ \vdots & \vdots & \vdots & \vdots & \vdots \\ a_{D1} & a_{D2} & a_{D3} & \cdots & a_{DN} \end{bmatrix}$$

$$(D = \sum_{m=1}^M d_m)$$

**Multivariable Integrated field**

## ◆ Uncentered statistics

*uCORR* Eq. 2 ( $M = d_m$ )

*VSC* Eq. 2 ( $M = D$ )

*rms* Eq. 1 ( $M = d_m$ )

*RMSL* Eq. 1 ( $M = D$ )

*rms\_std* Eq. 6

*RMSD* Eq. 3 ( $M = d_m$ )

*RMSVD* Eq. 3 ( $M = D$ )

*MISS* Eqs. 2, 8-10

## ◆ Centered statistics

*CORR* Eq. 12 ( $M = d_m$ )

*cVSC* Eq. 12 ( $M = D$ )

*SD* Eq. 11 ( $M = d_m$ )

*cRMSL* Eq. 11 ( $M = D$ )

*SD\_std* Eq. 18

*cRMSD* Eq. 13 ( $M = d_m$ )

*cRMSVD* Eq. 13 ( $M = D$ )

*ME* Eq. 14 ( $M = d_m$ )

*VME* Eq. 14 ( $M = D$ )  
/ *MEVM (MEVD)*

*MISS* Eqs. 2, 8-10

## Grades of Performance metrics

Statistics for individual variables

Statistics for multivariable integrated field

An index summarizing overall performance