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Abstract

This file can be used as a template for write SPE conference papers...

Introduction

Introduction...

Section 1

Abbreviate and capitalize “equation”, “figure”, “reference” and “column” when followed by a number or designating letter. Do not abbreviate “table”,. “appendix” or “page”. Use Eq. 1, Fig. 1 or Figs. 1 and 2, Table 1 and Appendix A.

When a figure is cited for the first time and happens to be in parentheses, both the figure number and the parentheses should be bold, along with any punctuation that immediately follows the parentheses **(Fig. 1)**. If a figure is cited for the first time and is enclosed in parentheses along with additional text, then ONLY the figure designation should be bold, not the parentheses or any following punctuation (see data in **Fig. 1**). Bold the first reference to a portion of a multipartite figure **(Fig. 2a)**, but leave subsequent references to other parts in normal type.

Figure 1: Example of figure.

(a) Subcaption 1 **(b) Subcaption 2** **(c) Subcaption 3**

Figure 2: Example of multiple figures (use subfig package).

Conclusions

We presented an application of...

Acknowledgements

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Nomenclature

$y =$ state vector
$m =$ vector of model parameters
$p =$ vector of primary variables
$d =$ vector of predicted data
$d_{\text{obs}} =$ vector of observed data
$d_{\text{uc}} =$ vector of perturbed observations
$g(m) =$ vector of predicted data
$C_{\text{Y}} =$ state covariance matrix
$C_{\text{YD}} =$ cross-covariance between state and predicted data
$C_{\text{MD}} =$ cross-covariance between model parameters and predicted data
$C_{\text{PD}} =$ cross-covariance between primary variables and predicted data
$C_{\text{DD}} =$ auto-covariance of predicted data
$C_{\text{D}} =$ covariance matrix of measurement errors
$H =$ augmented matrix for EnKF
$K =$ Kalman gain matrix
$\rho =$ correlation matrix for localization
$N_d =$ total number of observed data (all times)
$N_n =$ number of observed data at nth data assimilation step
$N_m =$ number of model parameters
$N_p =$ number of reservoir simulator primary variables
$N_y =$ size of the state vector. $N_y = N_m + N_p + N_n$
$N_e =$ number of ensemble members
$N_g =$ number of active gridblocks
$O_d(m) =$ likelihood objective function
$O_N(m) =$ normalized likelihood objective function

Subscripts

$n =$ data assimilation step number
$j =$ ensemble member

Superscripts

$n =$ data assimilation step number
$a =$ analysis
$f =$ forecast

References