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Chemical source term regression

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Preface

State of my knowledge on chemical source terms.

This document is still in preparation. Please feel free to contact me with any suggestions, corrections or comments.

Keywords

Principal Component Analysis, chemical source

Contents

1 The chemical source

2 PC-sources

The original chemical sources are linearly transformed using the matrix $\mathbf{A}$ of Principal Component modes and each PC-source term is additionally scaled by the corresponding scaling factor stored in a vector $\mathbf{d}$.

$$\mathbf{S_z} = \mathbf{SA} \cdot \mathbf{d}^{-1} \tag{1}$$

Each PC-source is a linear combination of the original sources (columns of $\mathbf{S}$). Each PC-source is computed from only one Principal Component (column of $\mathbf{A}$).

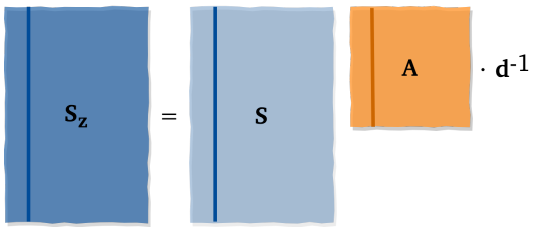

Figure 1: Computation of the PC-sources (columns of $\mathbf{S_z}$).

References

[1]