Letters

Corrections to "An Aggressive Approach to Parameter Extraction"

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In the above paper[1] there is a serious mistake in the APE algorithm steps given in Section IV. Our comments on the steps of the algorithm were themselves shown as part of the algorithm steps. This mistake rendered the algorithm steps obscure. The algorithm steps should read as follows.

Step 0) Given $\boldsymbol{x}_{em}$, δ, and n. Initialize $V^{(1)} = \{\boldsymbol{x}_{em}^{(1)}\}$, where $\boldsymbol{x}_{em}^{(1)} = \boldsymbol{x}_{em}$ and set $i = 1$.

Comment: The set $V^{(i)}$ contains the points used for the MPE in the ith iteration. The index i is equal to $|V^{(i)}|$, the cardinality of $V^{(i)}$.

Step 1) Apply MPE using the set $V^{(i)}$ to get $\boldsymbol{x}_{os}^{e(i)}$.

Comment: The point $\boldsymbol{x}_{os}^{e(i)}$ is the solution to the MPE problem obtained using the set $V^{(i)}$.

Step 2) If the Jacobian of $\boldsymbol{R}$ at $\boldsymbol{x}_{os}^{e(i)}$ has full rank, go to Step 4.

Step 3) Obtain a new perturbation $\Delta\boldsymbol{x}$ using (13), use (24) to get $\Delta\boldsymbol{x}_{em}$ and let $V^{(i+1)} = V^{(i)} \cup \{\boldsymbol{x}_{em}^{(i+1)}\}$, where $\boldsymbol{x}_{em}^{(i+1)} = \boldsymbol{x}_{em} + \Delta\boldsymbol{x}_{em}$. Set $i = i + 1$ and go to Step 1.

Comment: The perturbation $\Delta\boldsymbol{x}$ is rescaled to satisfy the trust region condition $\|\Delta\boldsymbol{x}\| = \delta$.

Step 4) If $|V^{(i)}|$ is equal to one, go to Step 6.

Step 5) If $\boldsymbol{x}_{os}^{e(i)}$ is approaching a limit, stop.

Step 6) Obtain a new perturbation $\Delta\boldsymbol{x}$ using (23) and use (24) to get $\Delta\boldsymbol{x}_{em}$. Update δ and let $V^{(i+1)} = V^{(i)} \cup \{\boldsymbol{x}_{em}^{(i+1)}\}$, wher $\boldsymbol{x}_{em}^{(i+1)} = \boldsymbol{x}_{em} + \Delta\boldsymbol{x}_{em}$. Set $i = i + 1$ and go to Step 1.

Comment: In Step 6, the eigenvalue problem is solved and the perturbation $\Delta\boldsymbol{x}$ is selected according to the scheme discussed in the previous section. This scheme may result in updating the trust region size. The algorithm terminates if the vector of extracted coarse model parameters obtained using i fine model point is close enough in terms of some norm to the vector of extracted parameters obtained using $i - 1$ fine model points.

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[1]M. H. Bakr, J. W. Bandler, N. Georgieva, "An aggressive approach to parameter extraction," *IEEE Trans. Microwave Theory Tech.*, pp. 2428–2439, vol. 47, no. 12, Dec. 1999.