

# Erratum to: Generalized incremental frequency method for topological design of continuum structures for minimum dynamic compliance subject to forced vibration at a prescribed low or high value of the excitation frequency

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**Erratum to: Struct Multidisc Optim (2016)**  
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The original version of the above article unfortunately contained some typographical errors on page 12. These typos should be corrected as follows:

1. Page 12, left hand column, first line after Equation (1c\*) : (1b\*\*) should read (1b\*)
2. Page 12, left hand column, second line after Equation (1c\*) : (1c\*\*) should read (1c\*)
3. Page 12, left hand column, fifth line after Equation (1c\*) : (1b\*\*) should read (1b\*)
4. Page 12, left hand column, sixth line after Equation (1c\*) : (1c\*\*) should read (1c\*)
5. Page 12, right hand column, seventh line from top: (1c\*\*) should read (1c\*).

Thus, the two paragraphs after Equation (1c\*) should read: Here, (1b\*) expresses the constraint for the static compliance  $C_s$  with  $\bar{C}_s$  as a given upper bound, and (1c\*) is the static

equilibrium equation, where  $\mathbf{P}$  denotes the static loading, and the corresponding static displacement vector  $\mathbf{U}^*$  is defined as  $\mathbf{U}^* = \mathbf{U}(\omega = 0)$ . Based on Eqs. (1b\*) and (1c\*), the sensitivity  $C'_s$  of the static compliance is obtained as

$$C'_s = \mathbf{P}'^T \mathbf{U}^* + \mathbf{P}^T \mathbf{U}'^* = 2\mathbf{U}^{*T} \mathbf{P}' - \mathbf{U}^{*T} \mathbf{K}' \mathbf{U}^*, \quad (14)$$

where prime denotes partial derivative with respect to the design variable  $\rho_e$ , and the sensitivity  $\mathbf{P}'$  of the load vector vanishes if  $\mathbf{P}$  is design-independent. Note that the gradient  $C'_s$  in (14) is reduced analogously to the gradient of the objective function  $F^*$  for the squared dynamic compliance in (10) to facilitate treatment by adjoint sensitivity analysis.

With the inclusion of the upper bound on the static compliance of a structure, the dynamic and static equilibrium equations (1c) and (1c\*) are solved by Gauss elimination, and the constrained topology design problem (1a-e, b\*,c\*) is solved iteratively to convergence by means of the gradients  $C'_d$  and  $C'_s$  of the dynamic and static compliances, by usage of the MMA optimizer (Svanberg, 1987).

The original article was corrected.

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The online version of the original article can be found at <http://dx.doi.org/10.1007/s00158-016-1574-3>.

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