## CORRECTION

# Advanced Modeling and Simulation in Engineering Sciences



# Correction to: Enhanced numerical integration scheme based on image-compression techniques: application to fictitious domain methods

Márton Petö<sup>1\*</sup>, Fabian Duvigneau<sup>1</sup> and Sascha Eisenträger<sup>2</sup>

The original article can be found online at https://doi.org/10. 1186/s40323-020-00157-2.

\*Correspondence: marton.petoe@ovgu.de <sup>1</sup>Institute of Mechanics, Otto von Guericke University, Magdeburg, Germany

Full list of author information is available at the end of the article

## Correction to: Adv. Model. and Simul. in Eng. Sci. (2020) 7:21 https://doi.org/10.1186/s40323-020-00157-2

Following publication of the original article [1], the authors reported the errors in the equation and in the text.

The corrected text and equation are given below:

First, we evaluate the quality and reliability of the results obtained when using the three methods investigated in this section. In Fig. 22, the errors in the energy norm

$$||e||_{\mathcal{E}(\Omega_{\rm e})} = \sqrt{\left|\frac{\mathcal{B}(\boldsymbol{u}_{\rm ref}, \, \boldsymbol{u}_{\rm ref}) - \mathcal{B}(\boldsymbol{u}, \boldsymbol{u})}{\mathcal{B}(\boldsymbol{u}_{\rm ref}, \, \boldsymbol{u}_{\rm ref})}\right|} \cdot 100[\%],\tag{20}$$

for various input parameters are presented, which should be minimized by the FCM solution on the *energy space*  $E(\Omega_e)$  over the domain  $\Omega_e$  [3, 33]. In Eq. (20),  $\boldsymbol{u}$  is the displacement field obtained by the FCM solution and  $\boldsymbol{u}_{ref}$  is the reference solution, obtained by p-FEM using blending functions [113] for an exact geometry mapping, resulting in a strain energy of  $1/2 \cdot \mathcal{B}(\boldsymbol{u}_{ref}, \boldsymbol{u}_{ref}) = 0.7021812127$  [31]. Besides investigating the global quality of the results based on  $||\boldsymbol{e}||_{E(\Omega_e)}$ , we also evaluate the solution based on point-wise values of the stress-fields  $\sigma_{vM}$  and  $\sigma_{yy}$  along the diagonal  $\overline{AB}$  in Fig. 21, where  $\sigma_{vM}$  is the von Mises stress and  $\sigma_{yy}$  the stress in the y-direction.

The original article [1] has been updated.

#### Author details

<sup>1</sup>Institute of Mechanics, Otto von Guericke University, Magdeburg, Germany, <sup>2</sup>School of Civil and Environmental Engineering, University of New South Wales, Sydney, Australia.

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