Errata

(English)

1) Thesis author: **Kanwar Osama Zulfiqar**
2) Thesis title: **Structural Performance Evaluation of Wind Turbine Towers Under Nordic Climate Conditions**
3) The thesis has error(s) on **page 29 Table 1 and page 38 figure 9 (a)**
4) The error(s) should be corrected as follows:

In the above-mentioned Table 1 and Figure 9 (a), the blade mass has been mentioned as 2.2 tons, however, it is 22.7 tons. Due to this reason, the mass of the Rotor Nacelle Assembly (RNA) changes to 303 tons from previously calculated 241.9 tons. This includes 175.1 tons of nacelle mass, 60.2 tons of hub mass and 68.1 tons of mass for three blades. Due to this change of mass, there is a change in the modes of vibration, stress and deflection of wind turbine tower.

With regards to the modes of vibration, the first four modes of vibration of the cohesive surface-based model change from 0.147Hz, 0.150Hz, 0.940Hz, and 0.965Hz to 0.134Hz, 0.134Hz, 0.970Hz, 0.979Hz. Similarly, the first four modes of vibration for the tie-connected tower change from 0.148Hz, 0.148Hz, 0.983Hz and 0.983Hz to 0.136Hz, 0.136Hz, 0.985Hz and 0.985Hz. The parametric study has the same trend as previously observed where with the loss of connection contact area, the first mode of vibration decreases further. With the decrease in connection contact area from 6%, 12%,18% to 25%, the first mode of vibration decreases to 0.132Hz, 0.131Hz, 0.127Hz, and 0.119Hz respectively.

The average operational stage also presents some changes in the stress and deflection for the wind turbine tower. For the cohesive surface model, the stress decreases from 70.7MPa to 68.1MPa while the deflection decreases from 863.4mm to 710.1MPa. For the tie-connected model, the stress and deflection change from 74.9MPa and 1164mm to 79.3MPa and 1161mm. The parametric study during the operational stage loads and bolt loosening reveals that with a change in connection reduction area from 6%,12%,18% and 25%, the stress increases to 69MPa, 96.3MPa, 281MPa, and 345MPa respectively. For similar percentages of connection area reduction, the deflection increases to 711mm, 736mm, 745mm, 760mm and 860mm.

For the extreme conditions with the blades pitched down, the stress and deflection of the cohesive surface-based towers decrease from 102.6MPa and 960.9mm to 97.6MPa and 773.7mm respectively. The same parameters for the tie-connected model change from 106.6 MPa and 1265mm to 108.7MPa and 1232mm. For extreme wind conditions and blades in attack mode, the stress and deflection for the cohesive-surface model change from 215.6MPa and 2885mm to 213.3MPa and 2744mm. The same parameters for the tie-connected tower decrease from 216.3MPa and 3332mm to 219.7MPa and 3267mm.