



Influences on Planet Carrier Bearing Load Distribution of a 3 MW Wind Turbine Gearbox

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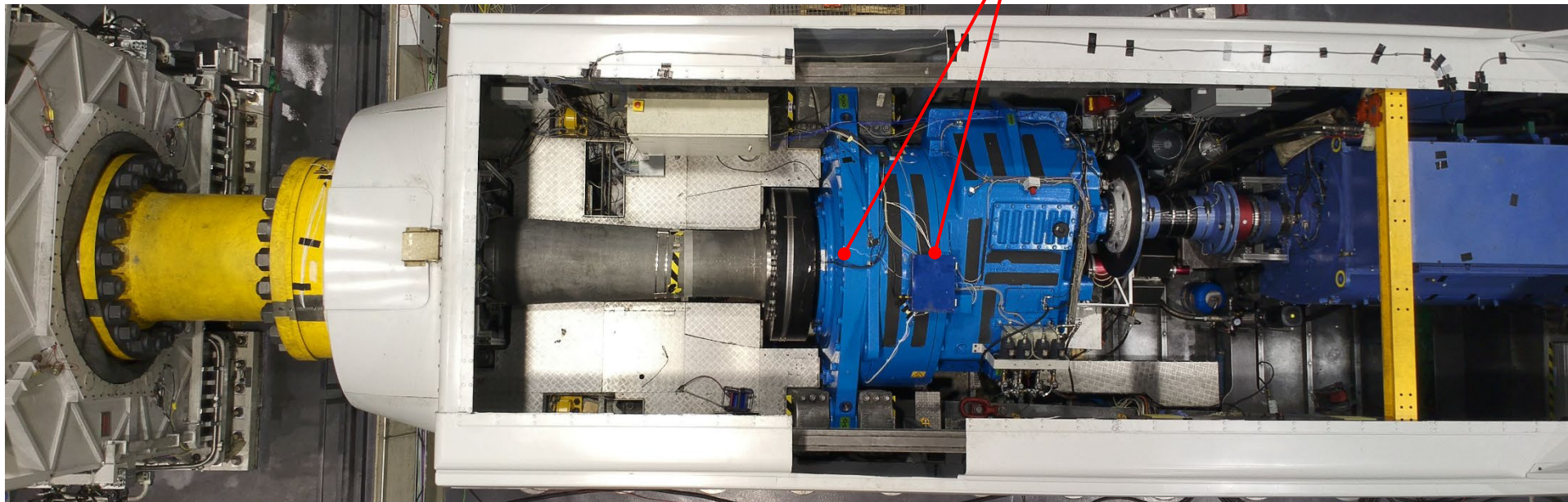


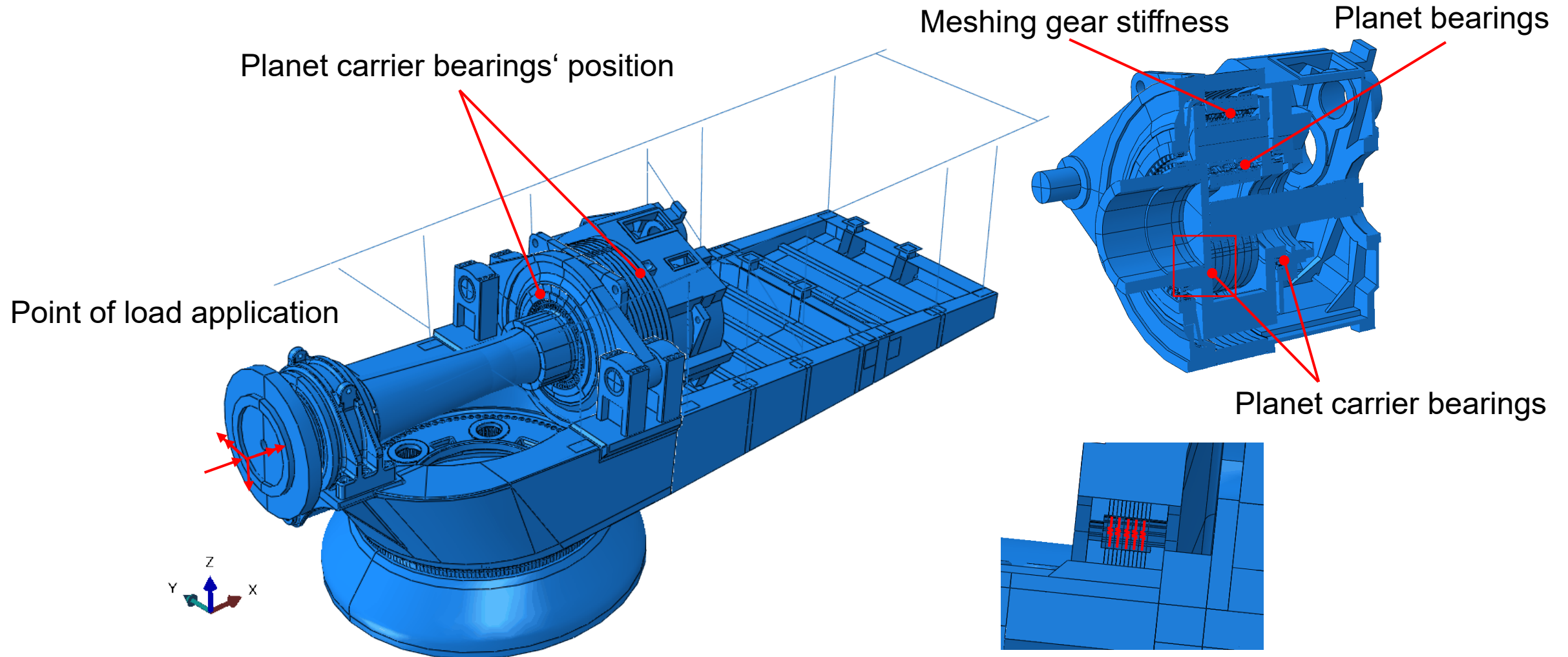
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- Fatigue failures occur in planet carrier bearings due to bearing loads and surrounding stiffness
- Bearing load distribution depends on support system
 - High bending moments as gearbox input loads act on planet carrier bearings
- Very expensive change of bearings

Position of planet carrier bearings





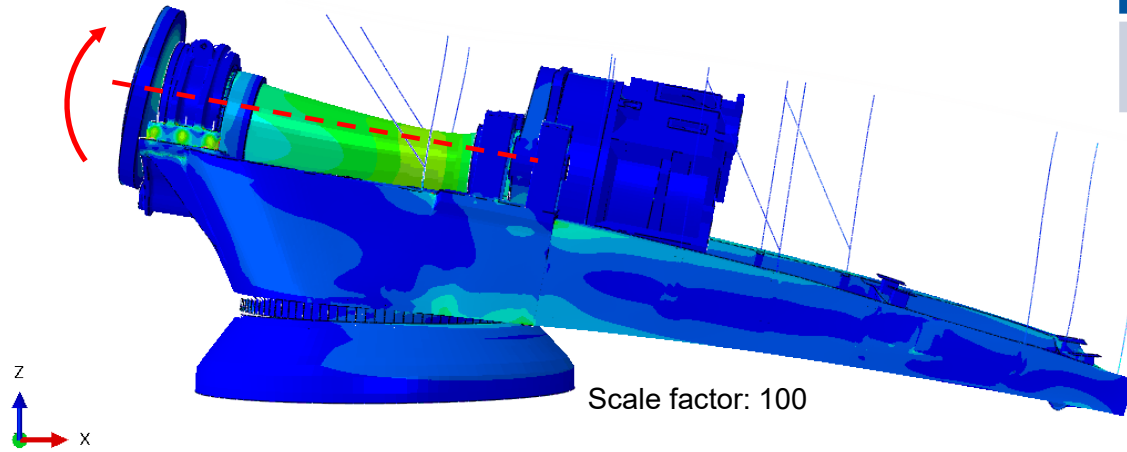
Bearing Loads under Exemplary Load



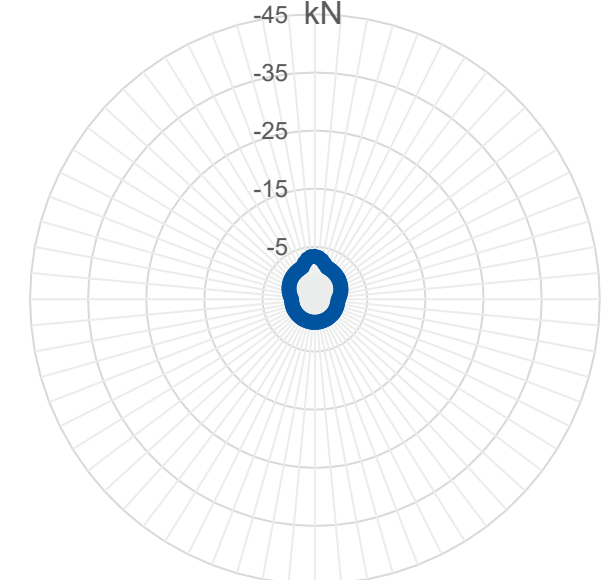
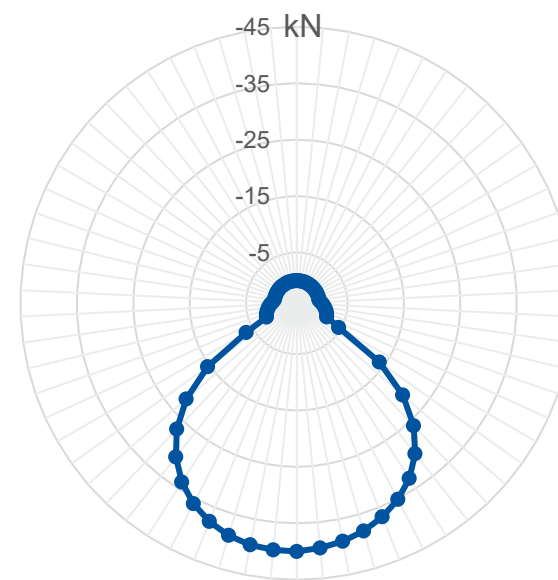
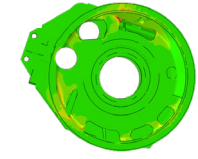
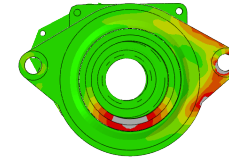
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	Fx [kN]	Fy [kN]	Fz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
Load Case	75	0	-488	1000	1500	0



Rotorsided bearing load

Generatorsided bearing load

- Total bearing loads:
 - Rotorside bearing: 697 kN
 - Generatorside bearing: 50,8 kN

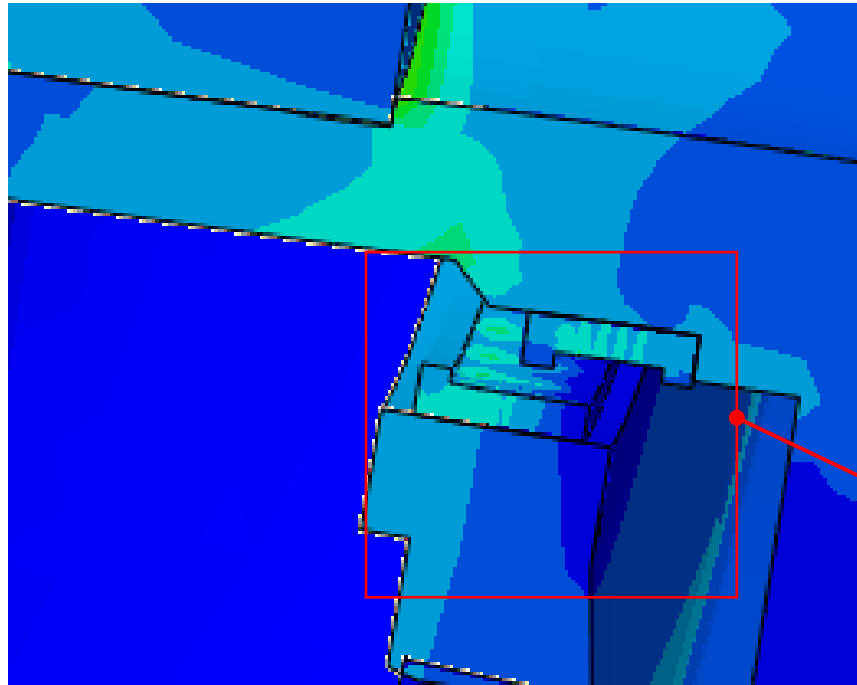
Axial Roller Load Distribution



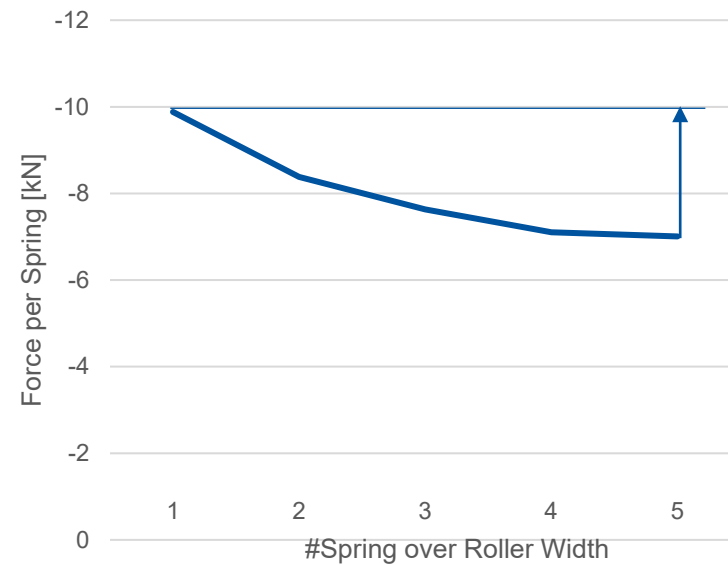
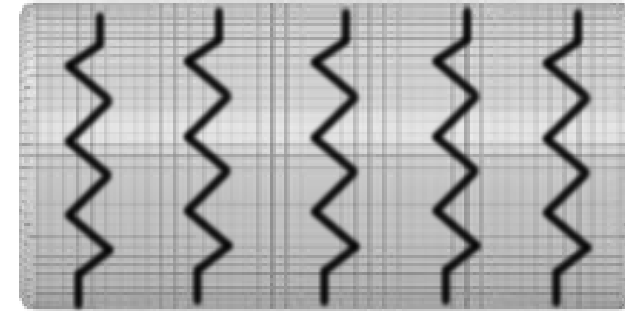
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Scale factor: 100



40 % increase



Thank you
for your attention

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