

“Modelling of residual stresses in digitally twinned metal wind turbine support towers”

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Executive Summary

Funding for a PhD studentship is available to complement ongoing endeavours in creating geometric digital twins of massive-scale metal wind support structures by tackling the characterisation of manufacturing-induced residual stresses. You will be tasked with modelling residual stress development in such structures based on both idealised and real geometries, and in quantifying their influence on the ultimate limit state of buckling. The project will have industrial support from Siemens Gamesa Renewable Energy, among others. For more information about the background and the type of research group you would be joining, please see here:

www.imperial.ac.uk/news/257753/transforming-wind-energy-infrastructure-with-digital/

Funding is available to cover 3 years of UK Home fees plus 3.5 years of a maintenance bursary (approximately £21.3k per year) by generous support from the Department of Civil and Environmental Engineering of Imperial College London. International students are welcome to apply if they can demonstrate the financial means to cover the difference between Home and Overseas tuition fees. We are looking for applicants who are strong in computational modelling with Abaqus or Ansys, a background / interest in structural mechanics and programming skills in Python and C++. A successful candidate will either have graduated with or be on track to graduate with a 1st Class Honours or Distinction equivalent. Those interested are invited to get in touch with Dr Adam Jan Sadowski (a.sadowski@imperial.ac.uk).