



Hoch belastete Großwälzlagerungen in Windenergieanlagen

By Daniel Becker

Shaker Verlag Apr 2012, 2012. Taschenbuch. Condition: Neu. Neuware - The industrial application of wind power plants is gaining importance in face of strongly growing energy demands and limited capacities of fossil fuels. Increasing contact loads and corrosive wear processes -especially in case of offshore use- are setting highest requirements regarding lubricant performance as well as bearing layout and manufacturing to ensure operational capability. The investigations carried out are focussing on slewing blade and main rotor bearings of large diameter for wind turbines. With special regard to blade bearings a testrig is designed allowing grease lubricant testing under permanent-pitch operating conditions for on- and offshore use. The influence of lubricant on tribocorrosive wear, frictional torque and raceway damage is experimentally investigated by use of optical interferometric and metallographical analysis of contact area. The experimental results highlight significant differences in lubricant performance preventing fretting wear under on- and offshore operating conditions. To investigate tribocorrosive wear process in grease lubricated bearings in detail, an electrochemical measurement device is applied to a test rig for annular roller bearings. Results based on simultaneous recording of corrosion potential-time curves may form a base for further research activities on tribocorrosive wear in heavily loaded slewing bearing...



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