

# DESIGN IMPROVEMENT OF MULTI-FILM ROTOR JOURNAL BEARINGS OF DIESEL ENGINE TURBOCHARGERS

© 2009 E. A. Zadorojnaya, A. S. Fischer

South Ural State University

Three developed models of diesel engine turbocharger rotor journal bearings are presented. Numerical comparative experiments for these models designed for turbocharger TKR-8.5S are made by application of the hydrodynamic prediction methodic for multi-film journal bearing. Prospects of application of the developed designs are proved.

*Hydrodynamic journal bearing; Reynolds equation; turbocharger*

**Zadorozhnaya Elena Anatolievna**, candidate of engineering science, Associate Professor of «Motor Transport» Department of the South Ural State University, Chelyabinsk. Phone. (8-351) 267-92-13. E-mail: [elena-nea@rambler.ru](mailto:elena-nea@rambler.ru). Area of research: dynamics of rotors on floating bushed journal bearings, hydrodynamic lubrication theory.

**Fischer Alexey Sergeevich**, assistant of «Motor Transport» Department of the South Ural State University, Chelyabinsk. Phone. (8-351) 267-92-13. E-mail: [zea@susu.ac.ru](mailto:zea@susu.ac.ru). Area of research: dynamics of rotors on floating journal bearings, hydrodynamic lubrication theory, turbocharger rotor journal bearing design, auto service equipment development.

## References

1. Prokopyev V.N., Boyarshinova A.K., Zadorozhnaya E.A. Non-linear dynamic of turbocharger journal bearing elements. Papers of International Forum of science, technique and education problems. Academy of science

about Earth. 3-7 dec., 2001, Moscow, Russia, pp. 10-14.

2. Prokopyev V.N., Zadorozhnaya E.A., Boyarshinova A.K., Fischer A.S., Akhmetjanov M.Sh., Perzev E.I., Shakeman I.H. "Turbocharger". Useful model patent №57848