Internship Opportunities at Principle Power Inc.

Emeryville Office
Company Introduction

• **PRINCIPLE POWER INC.**
• Designer of the WindFloat: leading technology in a new industry, Floating Offshore Wind Energy
  • 2MW prototype installed in 2011
  • 3 current “pre-commercial” windfarms in design/fabrication
  • Multi-GW pipeline of future commercial projects

• More information available at [www.principlepowerinc.com](http://www.principlepowerinc.com)

• Internship opportunities at our Emeryville office
  • Summer
  • During semester
Internship Research Topics

• **TOPIC 1 - Theoretical boundary condition study**
  • Understand non-linear wind and wave load application to FEM
  • Develop complex Finite Element model with consideration of load balance aspect
  • **Comparative study of strength and fatigue results with different commercial software** (ANSYS and one or two others- AutoDesk, FEMAP, etc.) to establish sensitivity of results to modeling methods and tools -
  • Study the **impact of boundary condition application procedure** considering inertia relief, weak spring or any manual load balancing method
Internship Research Topics

• **TOPIC 2: Tower flange and hull structure solid model study**
  • Study Wind Turbine *tower flange to steel foundation connection using 3D modeling*
  • Review industry practice for thick plate and forged steel modeling and analysis
  • Develop engineering procedures for solid modeling in ANSYS
  • Investigate various modeling tools such as submodeling and solid-to-shell interface modeling in ANSYS
Internship Research Topics

• **TOPIC 3: Heave plate steel design improvement by topology optimization method**
  • Investigate proper applications of *topology optimization method* to large scale welded steel structures
  • Optimize steel structures subject to wave dynamics
  • Optimize fabrication cost and weight