PRINCIPLE POWER

Internship Opportunities at Principle Power Inc.

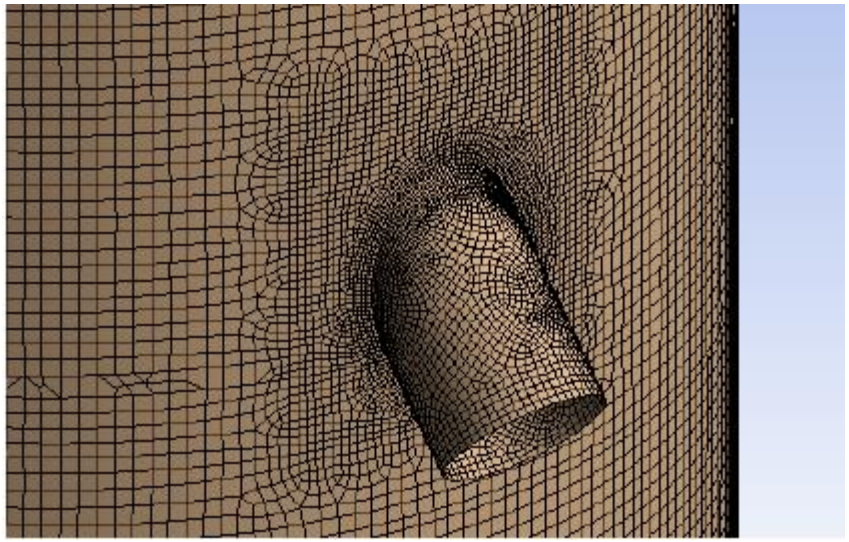
Emeryville Office

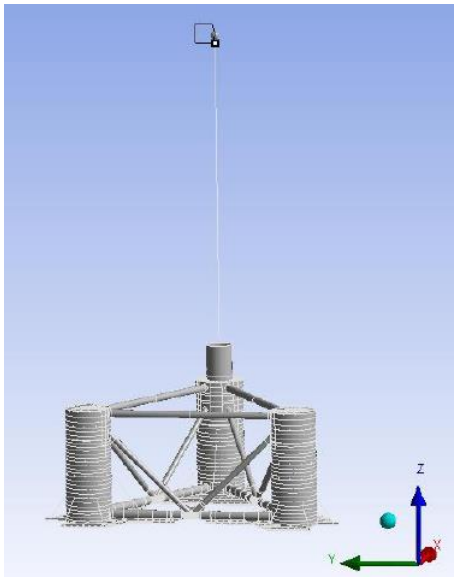
Company Introduction

- **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**
- **Internship opportunities at our Emeryville office**
  - Summer
  - During semester

Internship Research Topics

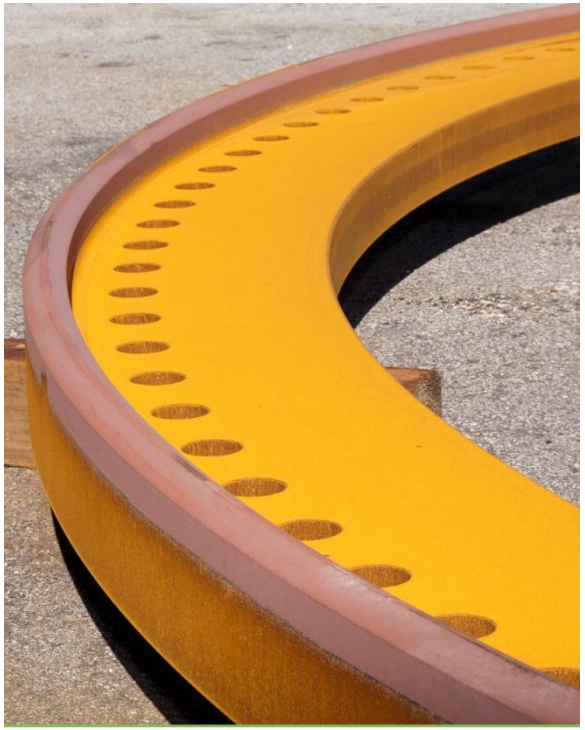
- **TOPIC 1 - Theoretical boundary condition study**
  - Understand non-linear wind and wave load application to FEM
  - Develop complex Finite Element model with consideration of load balance aspect
  - **Comparative study of strength and fatigue results with different commercial software** (ANSYS and 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

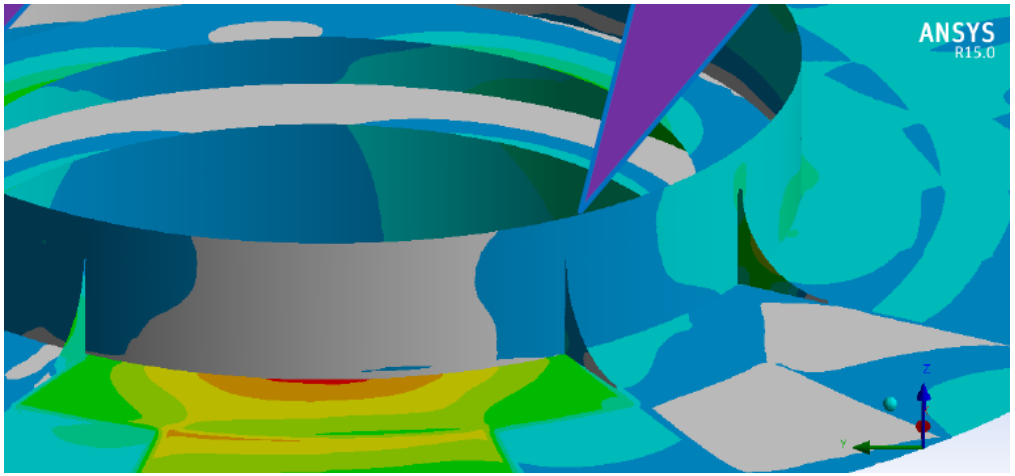




Internship Research Topics

- **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