**Introduction:** Hydrodynamic type journal bearings are considered to be a vital component of all rotating machinery. This poster represents the simulation of fluid film of lubricant in hydrodynamic plain journal bearing using COMSOL software.

**Computational Methods:** Generalized Reynolds equation is used to obtain the pressure distribution using Sommerfeld boundary conditions. The hydrodynamic theory applied to the hydrodynamic lubricated bearing is mathematically explained by Reynolds’s Equation.

\[
\frac{\partial}{\partial x}\left(\frac{h^3}{\mu} \frac{\partial p}{\partial x}\right) + \frac{\partial}{\partial y}\left(\frac{h^3}{\mu} \frac{\partial p}{\partial y}\right) = 6U \frac{\partial h}{\partial x}
\]

**Conclusion:**
- Application of General governing Reynolds equation.
- COMSOL gives approximately identical solution to analytical solution.
- At lower eccentricity values COMSOL predicts a slightly lower maximum pressure while at the higher values of eccentricity it predicts a slightly higher maximum pressure.

**Future scope:**
- Thermodynamic analysis.
- Dynamic analysis.

**References:**