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$$\phi_I = \text{Re}\{a \cdot \hat{\phi}_I \cdot e^{i\omega t}\} \quad \omega \quad a$$

$$\nabla^2 \phi = \frac{\partial^2 \phi}{\partial x^2} + \frac{\partial^2 \phi}{\partial y^2} + \frac{\partial^2 \phi}{\partial z^2} = 0 \quad ()$$

$$(\hat{\phi}_I)$$

$$(\hat{\phi}_D)$$

$$j \quad x_j$$

$$[] \quad ()$$

(Surge, Sway, Heave, Roll, Pitch and Yaw)

$$\phi_R = \sum_{n=1}^6 \dot{x}_j \cdot \phi_j \quad ()$$

$$\phi = \phi_I + \phi_D + \phi_R \quad ()$$

$$\nabla^2 \hat{\phi}_I = 0 \quad ()$$

$$-\omega^2 \cdot \hat{\phi}_I + g \frac{\partial \hat{\phi}_I}{\partial z} \Big|_{z=0} = 0 \quad ()$$

$$\frac{\partial \hat{\phi}_I}{\partial z} \Big|_{z=-h} = 0 \quad ()$$

$$\frac{\partial \phi}{\partial z} + \frac{1}{g} \frac{\partial^2 \phi}{\partial t^2} \Big|_{z=0} = 0 \quad ()$$

$$\nabla \phi \cdot \hat{n} = \frac{\partial \phi}{\partial n} = 0 \quad ()$$

$$\frac{\partial \phi_I}{\partial n} + \frac{\partial \phi_D}{\partial n} + \frac{\partial \phi_R}{\partial n} = V_B \quad ()$$

$$\nabla^2 \hat{\phi}_D = 0 \quad ()$$

$$-\omega^2 \cdot \hat{\phi}_D + g \frac{\partial \hat{\phi}_D}{\partial z} \Big|_{z=0} = 0 \quad ()$$

$$\frac{\partial \hat{\phi}_D}{\partial z} \Big|_{z=-h} = 0 \quad ()$$

$$\frac{\partial \hat{\phi}_D}{\partial n} = -\frac{\partial \hat{\phi}_I}{\partial n} \quad ()$$

$$\frac{\partial \phi_I}{\partial n} + \frac{\partial \phi_D}{\partial n} = 0 \quad ()$$

$$\frac{\partial \phi_R}{\partial n} = V_B \quad ()$$

$$\nabla^2 \phi_R = 0 \quad ()$$

$$\frac{\partial^2 \phi_R}{\partial t^2} + g \frac{\partial \phi_R}{\partial z} \Big|_{z=0} = 0 \quad ()$$

$$\phi(x, y, z, t) = \quad ()$$

$$\text{Re}\{[a \cdot \hat{\phi}_I + a \cdot \hat{\phi}_D] \cdot e^{i\omega t} + \phi_R\}$$

$$C_n = i \cdot \rho \cdot \omega \cdot \iint_S \text{Im}[\phi_R] \cdot \hat{n} \cdot ds \quad ()$$

$$F(t) = -\omega^2 \cdot M \cdot \hat{x}_3 \cdot e^{i\omega t} \quad ()$$

$$= \text{Re} \{ a \cdot (\hat{F}_I + \hat{F}_D) \cdot e^{i\omega t} + \hat{x}_n \hat{F}_R \cdot e^{i\omega t} + F_{Hydrostatic} \}$$

$$F_{Hydrostatic} = K_n \cdot x_n(t) \quad ()$$

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$$\frac{\hat{x}_n}{a} = \frac{\hat{F}_I + \hat{F}_D}{-\omega^2 \cdot (M + m_n) + i\omega \cdot C_n + K_n} \quad ()$$

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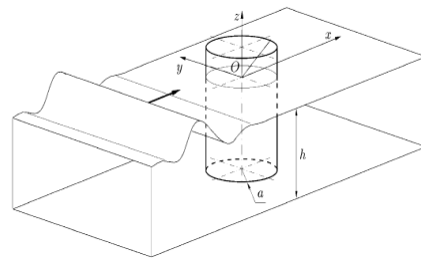
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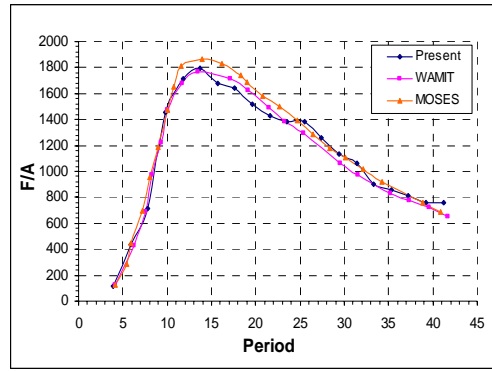
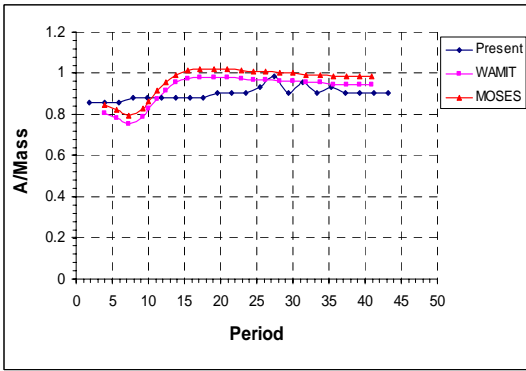
Length [m]	400
Radius [m]	20
KG [m]	200
Draft [m]	200
Mass [Ton]	256011
Ixx [m]	115.9
Iyy [m]	115.9
Izz [m]	14.14

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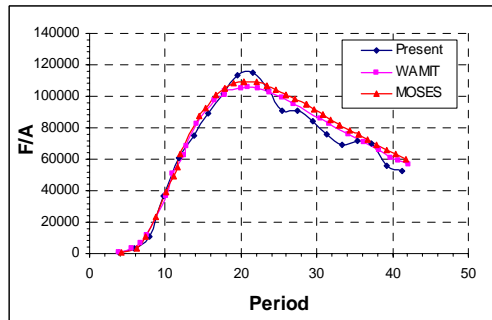
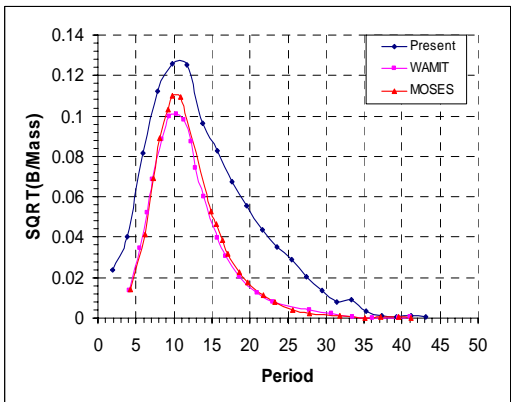
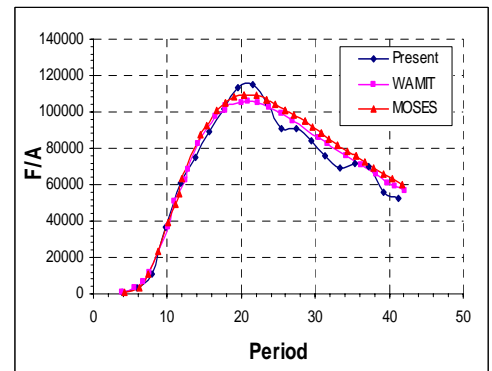
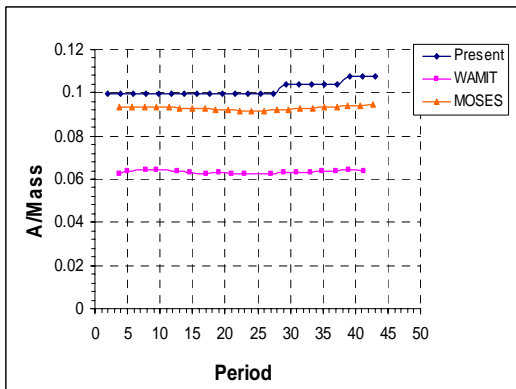
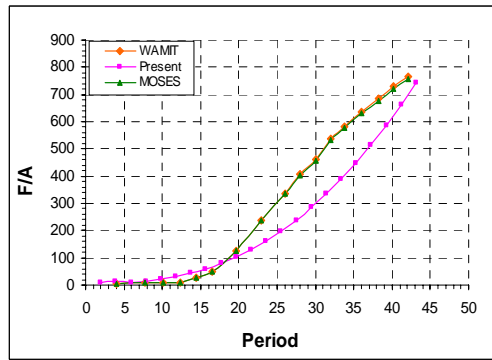
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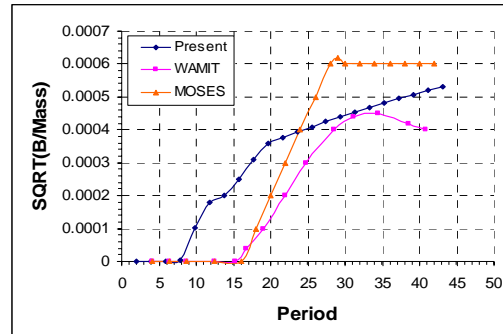




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- 1 - Spar
 - 2 - Catenary
 - 3 - Morrison's Equation
 - 4 - Diffraction
 - 5 - Finite Volume
 - 6 - Boundary Element
 - 7 - Finite Difference
 - 8 - Laplace Equation
 - 9 - Incident
 - 10 - Radiation
 - 11 - Froude-Krylove
 - 12 - Structured Uniform Mesh
 - 13 - Gauss-Sidel
 - 14 - Line Iterative Method
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