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Dambaru Bhatta* (bhattad@utpa.edu), 1201 W University Drive, Department of Mathematics, Edinburg, TX 78541. *Computation of the wave forces on a floating cylinder due to scattering and radiation due to surge, heave and pitch.*

Computation of the wave forces due to wave scattering and radiation on a floating vertical circular cylinder in water of finite depth is considered here. The total velocity potential is decomposed as four velocity potentials; one due to scattering (scattering problem) and the other three due to radiation respectively by surge, heave and pitch motions (radiation problem). The solutions to the boundary value problems are obtained by considering two regions. The analytical expressions for the wave forces are presented. Computational results of the wave forces for different depth to radius and draft to radius ratios are presented by solving the complex matrix equations. (Received August 29, 2007)