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Learning Tsunami Physics by Numerical Simulation(Part 2): A Curriculum of Physical Oceanography Education in High School

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In this study, we have continued our previous study (Niwa et al., 2014) to develop the new curriculum for high school students to learn the physics of tsunami waves. A special feature of this curriculum is that students try to perform numerical simulations to understand the basic behavior and dynamics of tsunami waves. This curriculum is composed of two successive classes of basic physics for second grade high school students (each class is 45 minutes in length). In the first class, we explain the physical characteristics of tsunami waves, the physical laws governing tsunami waves, and the basics of numerical simulation approach. In the second class, every student plays the numerical simulations of tsunami waves by using PC. In the current study, we have conducted questionnaire survey to all the students after each class to investigate how performing numerical simulation improves the understanding of the behavior and dynamics of tsunami waves.

Keywords: Tsunami, Numerical Simulation, High School Physics