



Online Geodynamics: Understanding how the Earth works through an interactive web-based application

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The Computational Geodynamics Laboratory at Geosciences Center, UNAM, Mexico, presents a initiative (<http://www.geociencias.unam.mx/geodinamica>), through which we seek to communicate information about our research to a public formed primarily from undergrad and grad students. In the same time, a set of web-based applications (Toolbox) will help students to better understand how the Earth works in term of its geological evolution. The “Research” option provides access to information related to new concepts in geodynamics, about the thermal structure associated with active subduction zones, about the formation mechanism of volcanoes, and how changing parameters will affect the evolution of a subduction system in time. Even if the “Research” area has no intention to become a tutorial in geodynamics, it lightens the understanding process through examples from different research areas such Mexico, Russia, USA, Europe, etc. The “Models” section presents a collection of dynamic numerical models in which the logged-in user can visualize convection and deformation models, tectonic plate reconstructions, or simply global field data such the geoid, gravity and magnetic field. All animations can be used in classes as a starting point in explaining processes like plate tectonics for example. Online “VirtualGeo” will allow students and teachers alike to have short geo-trips in various places of the Earth, where members of our laboratory shoot pictures or movies. They can see geysers, volcanoes, calderas, without actually being there. The “Toolbox” provides a set of state of the art applications, in which logged-in users can run on-line various programs, without previous knowledge of advanced programming (such as C or parallel programming). In this way the students can understand better how the variation of various physical

parameters can affect the modeling results.