

## **Characteristics of students' alternative ideas on geodynamic phenomena and factors controlling their development**

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We analyze Greek students' alternative ideas, both initial and synthetic, on geodynamic phenomena. More specifically, we present students' concepts on Earth structure, earthquake occurrence, volcano formation and relief change. An indicative curriculum and textbook evaluation is attempted in order to specify their involvement in concept construction. A new synthetic mental model on earthquake occurrence is revealed. New synthetic alternative ideas on geodynamic phenomena are presented. Finally, (a) the characteristics of initial and synthetic alternative ideas on geodynamic phenomena are outlined separately, and (b) the factors that control their development are highlighted and grouped, hoping that their revelation will lead to the decomposition of alternative ideas.