

Water content of Earth underestimated

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Next step for reform of geophysics after conclusion, that Earth's density is overestimated, should be- reestimation of terrestrial internal water content. This could prompt new look to earthquakes phenomena, Expanding Earth theory and other geophysical oddities

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Understanding, that we do not know value of Earth's mass (Alksnis, 2018), doubtful concept of global geomagnetism, poor state of planetary heating theories and climatology, dominant position of plate tectonics nonsense and other shortcomings (Alksnis, 2016) should provoke use of all possible related methods for correct understanding of Earth's interior. Interesting question is about internal water of planet. Hirschmann and Kohlstedt (2012) highlighted different aspects of action of Earth's mantle water. However, outsider gets the feeling, that Earth's mantle water presents a mystery for mainstream science. Perhaps analysis of volcanic steam emission amounts could be useful here. Surprisingly, nobody seems to be much interested in this question. We get from Wiki, that water vapor constitutes more than 60 percent from volcanic emissions.

Thus from Siegel (2017) one can understand, that degassing of Mt. Etna adds about 35 000 tons of water vapor to atmosphere per day. Scientists are mainly interesting in visible volcanoes, so from estimations of volcanic activity we can see level of annual emissions of volcanic water vapor some 1 billion tons.

Here are data however that number and activity of underwater volcanoes are seriously underestimated (Casey, 2014). From estimated three million underwater volcanoes 139 000 have been estimated as active (do not mentioning smaller seamounts and large number of hydrothermal vents). Thus transfer of water vapor from Earth's interior to atmosphere and oceans could be some 5 billion tons per year or more (suggesting low mantle viscosity). What means at least five cubic kilometers of internal water per year are lost from Earth's internal volume (around 4.62×10^{-12} of Earth's volume).

Since today is not very active period of volcanic activity, and Earth is thought to be degassing for billions of years, we can start to understand basics of alternative theories in geophysics. Estimated density of the Earth than could fall below 4.0.

References

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