

# 4<sup>th</sup> International Conference on **Earth Science & Climate Change**

June 16-18, 2015 Alicante, Spain

## **Propagation of longitudinal waves in structurally unsteady non-linear medium**

**Karim S Sultanov and S I Ismailova**

Urazbaev Institute of Mechanics and Seismic Stability of Structures, Republic of Uzbekistan

**P**rediction of parameters of seismic, explosive waves on the surface of Earth on different distances from the focus by design methods requires determination of regularities of wave propagation and attenuation in soils. To do so, it is necessary to solve wave problems with the use of certain laws of soil strain. It is known that in soil medium shock waves, originated in the focus of an earthquake or in the center of explosion, in the process of propagation transform into low-frequency longitudinal and transversal seismic waves; that is, a high-frequency component of shock waves is rapidly damping, while low-frequency waves propagate on long distances from the focus. Numeric solutions obtained for one-dimensional non-stationary problems on longitudinal wave propagation in soils (as in elastic, viscous-elastic medium) have shown that in these media transformations of shock waves into low-frequency seismic ones does not occur. In elastic medium the waves propagate without damping, while in linear viscous-elastic ones (standard-linear body) high-frequency waves do not damp. In these media it is impossible to obtain linear proportional dependence between damping coefficient and the frequency of longitudinal waves. An account in the law of soil strain (and not only soil, but in composite threads, flexible interlinkings) of structural changes under strain, in other words, of non-linear properties of soil, leads to transformation of shock waves into continuous longitudinal waves. Numeric solutions to wave problems on propagation of longitudinal waves in linear and non-linear viscous-elastic medium have been considered in the paper. The changes of wave parameters in these media and the regularities of damping on the frequency of longitudinal waves in a wide range have been obtained.

[sultanov.karim@mail.ru](mailto:sultanov.karim@mail.ru)

## **Impact of climate change on marine organisms: An overview**

**Kartikay Pandey**

Dr Pandey's Laboratories and Research Foundation, India

**M**ore than seventy percent of Earth's surface is covered with marine/salty water. World oldest, most revered & holy texts, the Vedas term the Ocean as 'Ratnakar' or the bestower of immense riches. From times immemorial the oceans have been a source of inspiration, awe and adventure for humankind. Modern science for the first time in the nineteen fifties discovered for the first time, potent bioactive, chemical compounds from marine organisms. Ara-C and related nucleotides were the foremost discoveries of cytotoxic metabolites from marine fauna. These secondary metabolites are bio-synthesized in the organisms as a means for offense and/or defense in order to sustain their existence in an otherwise highly hostile marine environment. Umpteen numbers of cytotoxic organic compounds have been isolated from marine organisms' particularly marine fauna. Some of these like the Bryostatins are in final stages of pre-clinical trials and are on the way of becomes potent drug leads in the future. The unfortunate trend of global warming and climate change has dealt a severe blow to the natural habitats, threatening the very existence of most of economically valuable marine organisms which can be a gold mine of priceless chemicals. Most of the Coral reefs have been destroyed, where sponges, soft corals and other organisms take shelter and grow in a conducive environment. We are fast losing several small marine species by each passing day. Same is case with the Indian Ocean which like other warm Oceans is at the receiving end of climate change. The situation is alarming, needing immediate redressal.

[drkartikaypandey@gmail.com](mailto:drkartikaypandey@gmail.com)