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Origin of Ice Ages

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The near-surface temperatures of the Earth are strongly affected by the precession angle (Ψ). Precession, in a revolving body, occurs due to the deviation of its mass distribution from the complete arrival symmetry. Precession angle affects the Earth's climate. Decrease of the precession angle is accompanied by a noticeable cooling of the climate. Glaciation emerges as soon as the Earth's average temperature reaches some critical value. As a result of the interaction between the Moon and Earth during the Pleistocene time, slow (but orderly) climate cooling episodes occurred periodically. The cooling periods lasted about 100,000-120,000 years and magnitude of cooling was 8-10°C. After the formation of thick ice covers, the climate warmed up by the same amount after a few thousand years. Glaciation degraded just as rapidly. Thus, Sorokhtin et al. (2010) were able to forecast the climate changes in the future. In the future (2020), despite releases of atmospheric gases, there will be a severe cooling down period.

Biography

George Chilingar is an American-Armenian Professor of Civil and Petroleum Engineering at the University of Southern California (USC). He has received his Bachelor's degree and Master's degree in Petroleum Engineering and PhD in Geology, all at USC. He has published 72 books and over 500 articles on geology, petroleum engineering and environmental engineering.

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