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Preliminary study of Global Warming mitigation by grazing OTEC

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Global warming means the observed century-scale rise in the average temperature of the Earth's climate system. However, most of the increased heat is stored in the ocean. This causes the sea surface temperature to rise, producing extreme weather. Ocean Thermal Energy Conversion (OTEC) utilizes the temperature difference between the sea surface water and deep seawater to generate electricity. OTEC requires pumping a large amount of deep seawater, which is clean, cold and rich in nutrients. If the used OTEC seawater, i.e. a mixture of warm and cold seawater, is released to the sea surface, an artificial upwelling is then created. The natural upwelling regions result in high levels of primary productivity and thus fishery production. The upwelling area will also present low sea surface temperature. Hence, large enough artificial upwelling may mitigate global warming. This process takes advantage of ocean thermal energy to generate clean energy, to create fishing grounds and improve climate change. An interdisciplinary research program promoted by the UN will be necessary to achieve this goal.

Biography

Nai Kuang Liang has completed his Dr-Ing from Technical University Hannover, Germany. He was the director of Institute of Oceanography, National Taiwan University. He has published papers in artificial upwelling, typhoon swell prediction, ocean thermal energy conversion and coastal protection. He is now Professor Emeritus of National Taiwan University.

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