



## **Satellite Thermal Monitoring of Ocean Front Evolution**

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**An application of Stefan-Boltzmann Theory of electromagnetic radiation is noted for satellite thermal monitoring of ocean front evolution. The author has found some satellite thermal patterns which were monitored after receiving satellite signals directly at a station located on a coast facing an ocean. Some of the patterns were including patches of an apparently high temperature. The author has found it to be strange under the normal condition of the routine operation. The patches may be in a form of a thermal pinnacle or a thermal plateau on the offshore surface of the sea surface. The author has found that it could be understood with a simple model. The model requires a set of several concave facets of the sea surface water waves, and each of the concave facets concentrates radiation out of the wave facets just at or neighbor a sensor mounted on an interested satellite. Assuming the sea surface as a black body, it can be seen a physical mechanism of the thermal pinnacle or plateau after an application of Stefan-Boltzmann Theory of radiation. A simple linear model for spacial spectrum of sea surface wave in the thermal pinnacle or plateau suggests what additional factors are effective to control the apparently high temperature on the sea surface found in the satellite thermal pattern.**