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Reflection of Microwave from Energy Deposit by X-ray Irradiation in Rock Salt: Implying Salt Ultra High Energy Neutrino Detector to act like a Radio Bubble Chamber

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We found microwave reflection from a small rock salt samples irradiated by X-ray. The reflection rate was consistent with number of ionized electrons by the irradiation. Coherent reflection was indicated by time dependence of the reflection rate. It means the irradiated size could be scaled up to ultra-high energy electromagnetic shower using longer wavelength while the reflection rate is kept. Information from antennae would be utilized to 3D reconstruction of the electromagnetic shower like as a radio bubble chamber. Pulse radar emission power could be as large as MW then radio wave can travel 10 attenuation length (2-3km) to be detected. The construction cost could be reduced much if the radar method is applicable, since number of boreholes can be reduced in which detection antennae are installed.

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