

Re: terahertz for measuring mass?

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On Jul 9, 11:41 pm, "EnigmaP...@xxxxxxxx" <EnigmaP...@xxxxxxxx> wrote:

Everyone,

I'm interested in t-rays or terahertz radiation – I understand this technology is being used for security imaging and such.

In principle, it's just a radar. But the penetration properties of radar (i.e. of EM radiation) change with frequency. With a frequency in the THz, the wavelength is below a millimeter. This "millimeter wave" radiation will penetrate clothing, but not skin. So some bright person thought of security as an application: look for concealed objects under clothing.

What I'm interested in are the spectroscopy properties and wondering if tHz could be used to measure the mass of an object of known properties or to even count such known objects (metallic, non metallic, or organic materials) within a defined area?

As much as any radar could. I know that attenuation in air tends to go up with frequency, so millimeter waves may not go very far. I've heard of 96 GHz as a frequency of interest, because there's a window of transparency at that frequency. Not sure how good the propagation is at 1 THz.

– Randy

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