Subject: Polarisation IDL & openGL
Posted by nasalmon on Tue, 13 Jan 2004 23:02:34 GMT
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To reproduce reality in graphics more accurately it would be necessary assimilate the effects of polarisation for reflecting surfaces. Specular reflection at a plane suface is described by two polarisations, one with an electric vector parallel and the other perpendicular to the plane of incidence. Furthermore, as the angle of incidence varies, the reflection coefficient varies differently for the two polarisations, becoming unity as a 90 degree angle of incidence is reached. This behaviour is described mathematically by the Fresnel equations, the two variables being the angle of incidence and the refractive index of the material.

Is there a simple way that IDL or openGL can handle the two polarisations? Mathematically, this gets a little complicated, as general radiation is partially polarised and therefore a correct description of polarimetric reflection needs to resolve the incident radiation into perpendicular and parallel components and then combine after reflection. If this were handled generally in IDL or openGL Object Graphics it could make programming this easier. Can this already be done, or are there any plans for this?

many thanks,
Neil