

lambert

Shaders



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Johann Heinrich Lambert, o Jean-Henri Lambert (26 de agosto de 1728 - 25 de septiembre de 1777), fue un matemático, físico, astrónomo y filósofo alemán de origen francés. Nació en Mülhausen (ahora Mulhouse, Alsacia, Francia) y murió en Berlín. Demostró que el número π es irracional, usando el desarrollo en fracción continua de tanx, con lo que cerró la posibilidad de poder determinar una expresión "exacta" (fracción numérica o cociente de dos enteros) para este número.1​ También hizo aportes al desarrollo de la geometría hiperbólica y de la astronomía, desarrollando un método para calcular las órbitas de los cometas y el teorema de Lambert.

El lambert (símbolo L, la o Lb) es una unidad de luminancia. No pertenece al Sistema Internacional), y recibió este nombre en honor de Johann Heinrich Lambert (1728–1777), un matemático, físico y astrónomo suizo. Una unidad de luminancia relacionada, el pie-lambert, es utilizado en iluminación, técnica cinematográfica y en la industria de simuladores de vuelo. La unidad correspondiente del Sistema Internacional es la candela por metro cuadrado (cd/m²).

Blinn

Is a material (shader) that is particularly effective at simulating metallic surfaces (for example, brass or aluminum) which typically have soft specular highlights.

Note:

Blinn is the most computationally expensive of the three common materials: Lambert, Phong, and Blinn.

You can set attributes of Blinn materials to control the size of shiny highlights and the ability of the surface to reflect its surroundings.

You can find this material in the Create tab.

Tip:

The soft highlights on Blinn surfaces are less likely to exhibit artifacts or flickering for thin highlights than the harder highlights on Phong surfaces. Use the Blinn surface material for surfaces with bump or displacement maps to reduce highlight artifacts or flickering.

Basic material types

Lambert

Lambert is a flat material type that yields a smooth look without highlights. It calculates without taking into account surface reflectivity, which gives a matte, chalk-like appearance. Lambert material is ideal for surfaces that don't have highlights: pottery, chalk, matte paint, and so forth. By default, any newly created object gets the Lambert shader assigned to it. If the object should have highlights, though, it's a good idea to assign another shader. You'll want to see highlights even during the modeling stage, to see whether they are breaking across the model (indicating a seam in the surface).

Phong

The Phong material type takes into account the surface curvature, amount of light, and camera angle to get accurate shading and highlights. The algorithm results in tight highlights that are excellent for polished shiny surfaces, such as plastic, porcelain, and glazed ceramic.

TIP

If you notice that the highlights of a surface with a phong shader applied are exhibiting flickering in your animation, or you see a "ropy" appearance from line to line, switch to a Blinn material type, which has smoother highlights. This problem can also be made worse by bump mapping.

PhongE

PhongE is a faster rendering version of Phong that yields somewhat softer highlights than Phong. Most artists use regular Phong for objects with intense highlights and Blinn for everything else.

Blinn

The Blinn material type calculates surfaces similarly to Phong, but the shape of the specular highlights in Blinn materials reflects light more accurately. Blinn is good for metallic surfaces with soft highlights, such as brass or aluminum. Because Blinn is a versatile material type and generally renders without problems, it's the primary material type we've used in these tutorials.

Anisotropic

The Anisotropic material type stretches highlights and rotates them based on the viewer's relative position. Objects with many parallel micro-grooves, such as brushed metal, reflect light differently depending on how the grooves are aligned in relation to the viewer. Anisotropic materials are ideal for materials such as hair, feathers, brushed metal, and satin.