



# Real-time Rendering of Subsurface Scattering According to Translucency Magnitude

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Hiroyuki Kubo

NAIST

Kohe Tokoi

Wakayama Univ.

Yasuhiro Mukaigawa

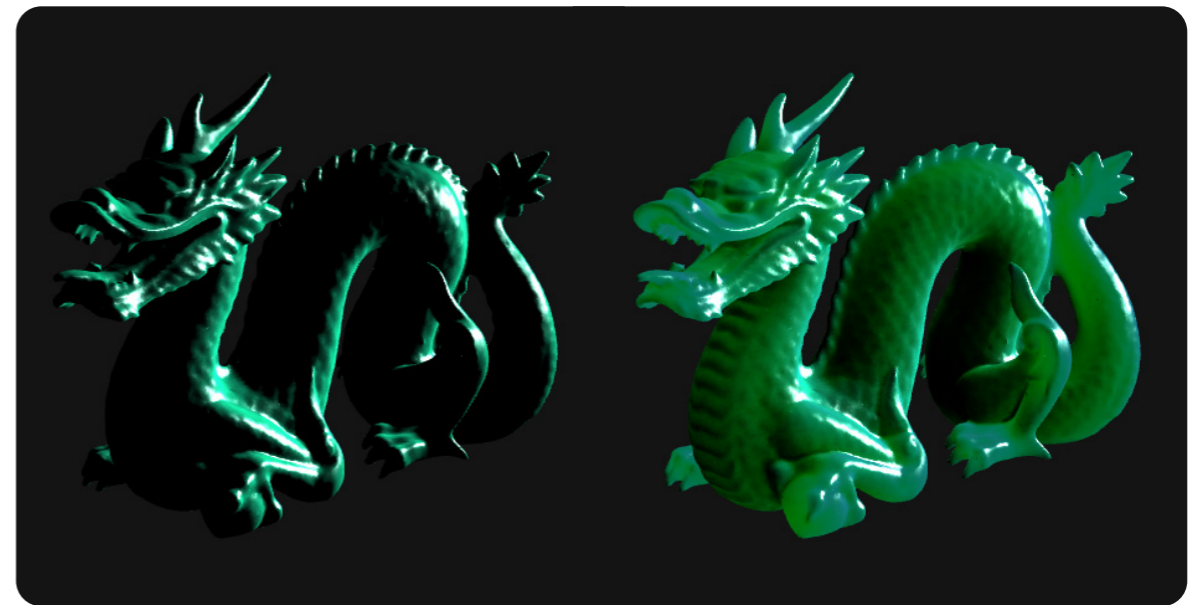
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## *Real-time Shader for Translucent Materials*

We propose a novel shading parameter  
“Translucency Magnitude” ,  $t_m$ .

According to the parameter,  
realistic translucent materials can be  
rendered in real-time.



Lambert + Blinn

Our Method + Blinn



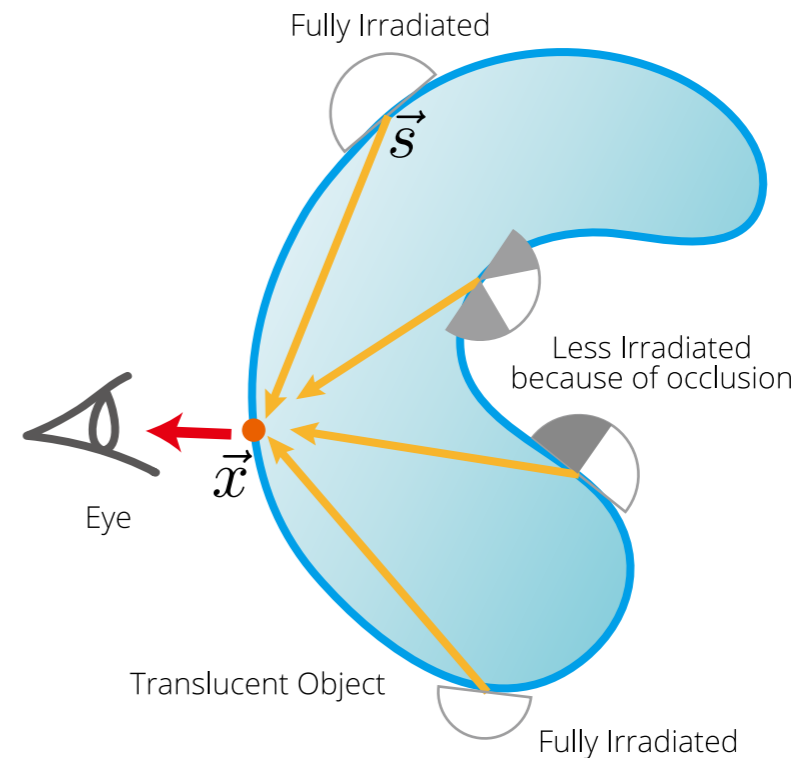
# What is "Translucency Magnitude" ?

Ambient Occlusion → Significance of Indirect Light

Translucency Magnitude → Significance of Subsurface Scattering

$$t_m(\vec{x}) = \int_S R_d(|\vec{x} - \vec{s}|) (1 - A_o(\vec{s})) dS$$

Translucency Magnitude
Energy Extinction (Scattering Profile)
Incident Energy





# Rendering Equation

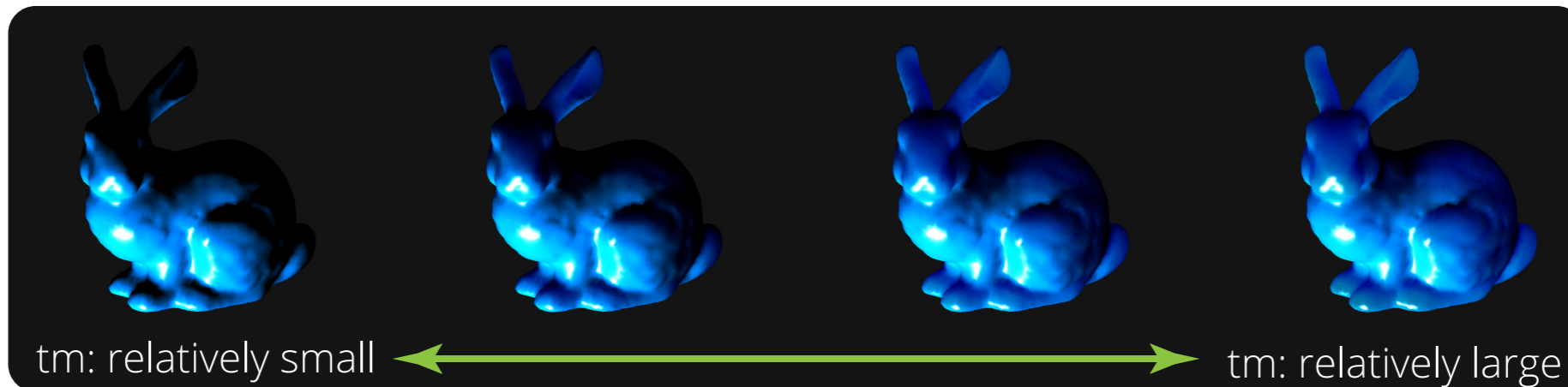
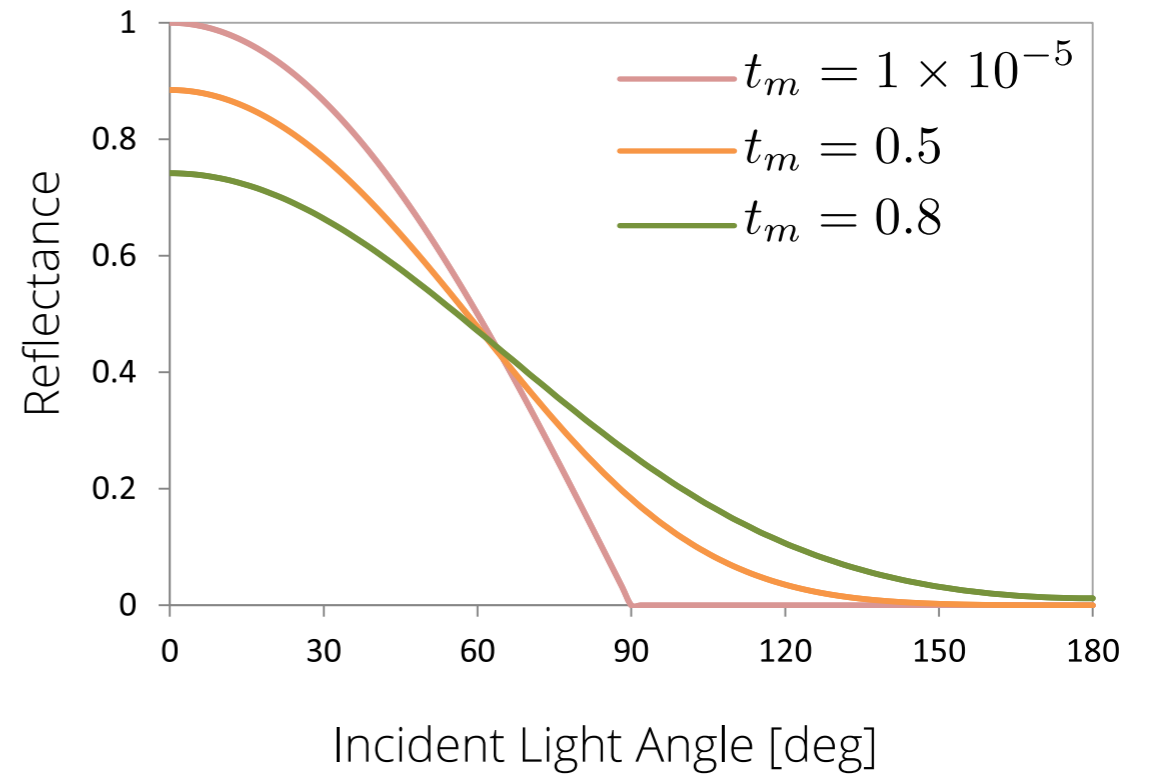
Conventional Lambertian  
 $I_d = k_d \max(\cos \theta_i, 0)$



Our Shading

$$I_{SSS} = k_d \{ \max(\cos \theta_i, 0) * \mathcal{G}(\theta_i; 0, t_m) \} (\theta_i)$$

Gaussian



Translucent Bunnies



## *Online Demo*

WebGL version is now available.



<http://goo.gl/BEVXT4>

