ガラス外観シミュレーションシステムの開発
(AGC 株式会社）植村　健

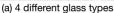## Development of glass appearance simulation system
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   This presentation is about our glass appearance simulation system which we developed. Glass is often considered to be quite difficult to accurately render by computer graphics, since it has optical characteristics of both transmission and reflection as well as even more complicated optics, while it is often used in great variety of purpose and environment. Since we have been going through tremendous amount of such research and development in many years, we have built rich database of optical properties of our materials and products. Combining this with our in-house raytracing technology which is capable of simulating the ultimate level of accurate physical optical phenomena, we developed our glass visualization system.

   Here, we are mainly focusing on visualization of building glass, which is one of our main contribution to society, and introducing examples of accurately visualized building glass for purpose of checking color and aesthetics under variety of conditions including weather and environment. (Fig.)

   弊社が開発したガラス外観シミュレーションシステムについて報告する。弊社が提供する素材のひとつであるガラスは、光の透過と反射をはじめとする複雑な光学物性を持ち、さまざまな環境や用途で使用されることが多いため、CG による正確な外観の再現が難しい場合も多い。私たちは、これまで長年にわたるガラス等の素材研究や商品開発により培われてきた材料や部材の光学物性データベースと、物理法則を極限まで追求する自社開発の光線追跡シミュレーション技術を組み合わせることによって、ガラス商品の外観を正確に可視化できる CG 映像生成システムを実現した。

   本報告では、弊社の主要商品である建築用ガラスに焦点を当て、ビルのガラス外観色や衣装性を、さまざまな天候や環境下で正確に予測した例を紹介する。
（Fig.）

(a) 4 different glass types   (b) 4 different weather conditions   (c) realistic building CG

Fig. CG examples