

Fast, forward-only path tracing caustics

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Abstract

abstract...

1 Introduction

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```

vec3 hitPos = o + d * rayPayload.distance;

// If partially transparent
if(rayPayload.opacity != 1.0)
{
    // Incoming ray
    if(dot(d, rayPayload.normal) <= 0.0)
    {
        o = hitPos.xyz - rayPayload.normal * 0.01f;
        d = refract(d, rayPayload.normal, eta);
    }
    else // Outgoing ray
    {
        vec3 temp_dir = refract(d, -rayPayload.normal, 1.0/eta);

        if(temp_dir != vec3(0.0))
        {
            o = hitPos.xyz + rayPayload.normal * 0.01f;
            d = temp_dir;
        }
        else
        {
            // Total internal reflection
            o = hitPos.xyz - rayPayload.normal * 0.01f;
            d = reflect(d, -rayPayload.normal);
        }
    }
}
else // Fully opaque
{
    o = hitPos + rayPayload.normal*0.01;
    d = cosWeightedRandomHemisphereDirection(rayPayload.normal, prng_state);
}

```

Figure 1: Caption...

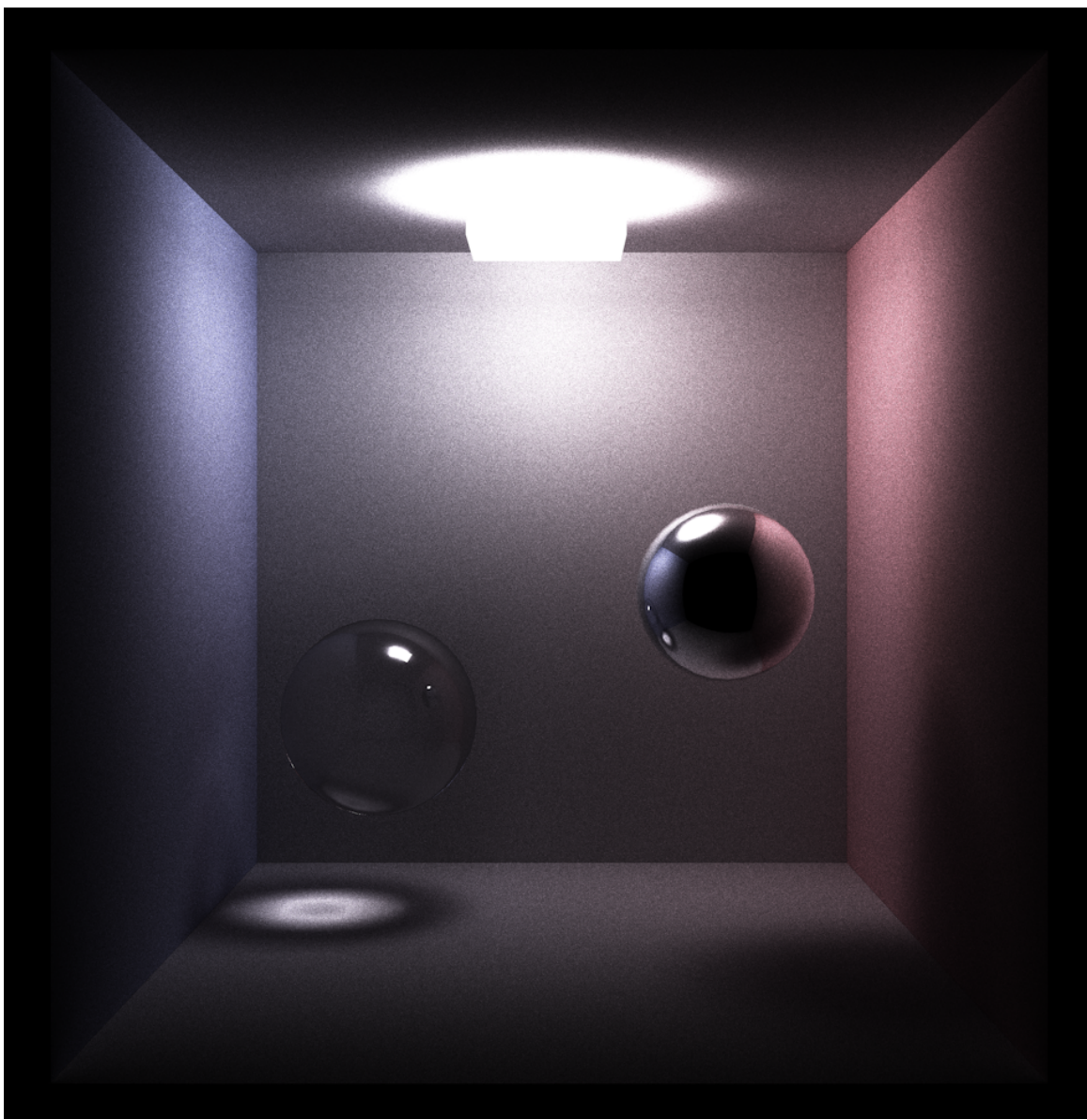


Figure 2: Caption...

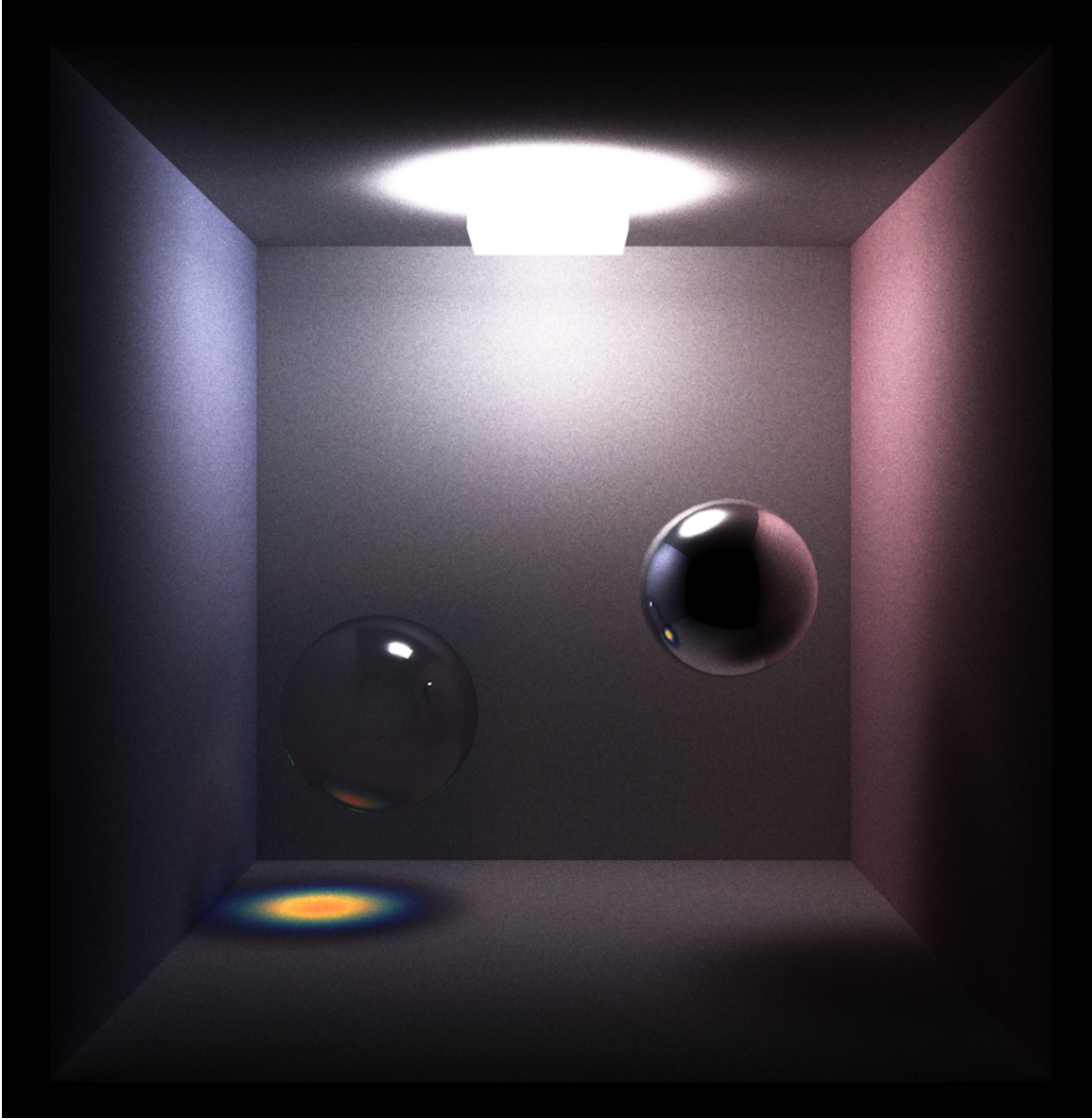


Figure 3: Caption...

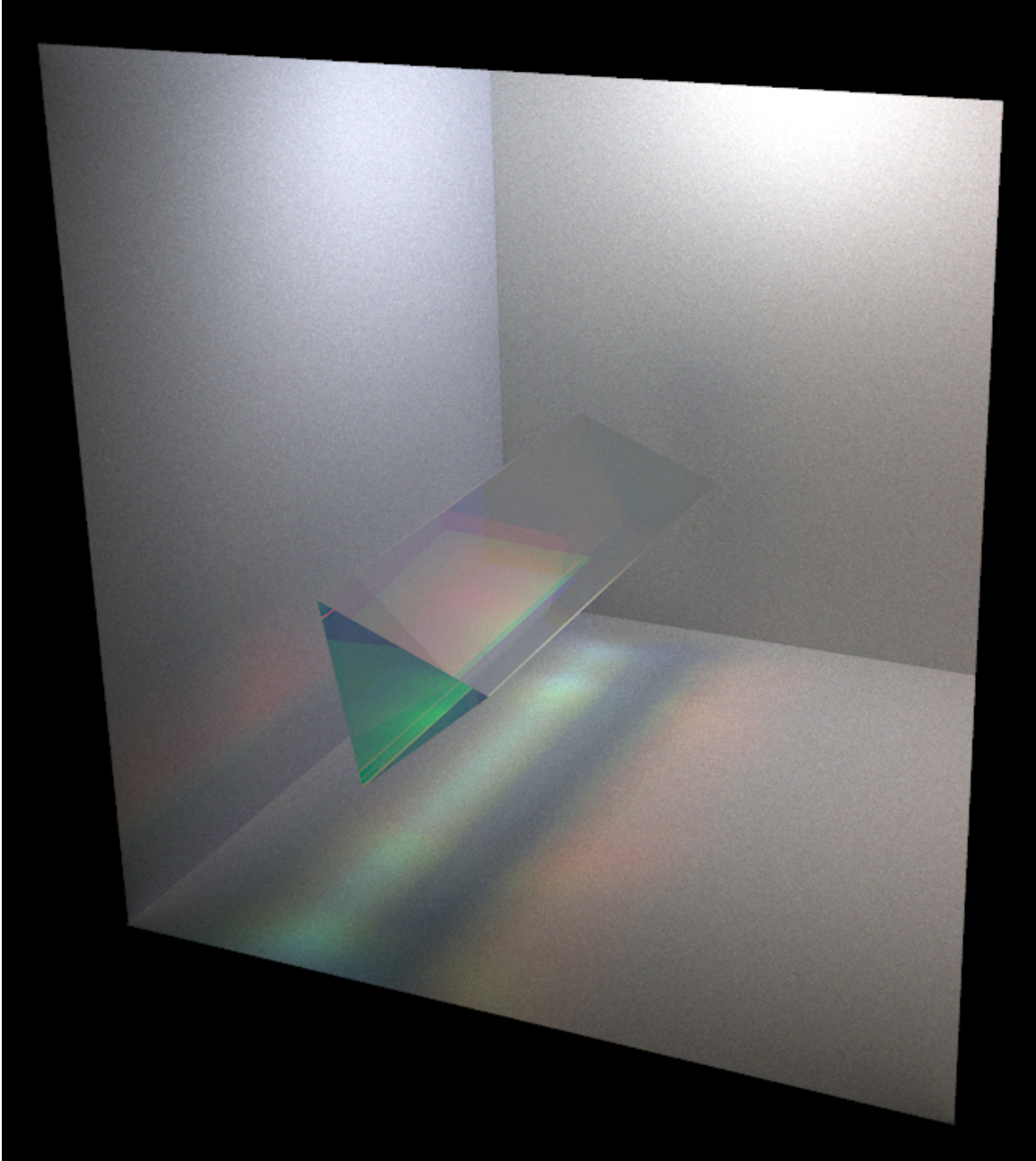


Figure 4: Caption...

References

- [1] Fatou. Sur les équations fonctionnelles. 1919