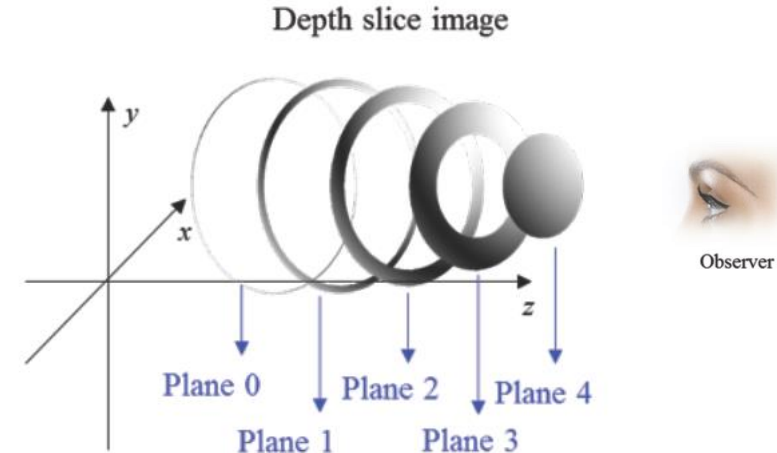
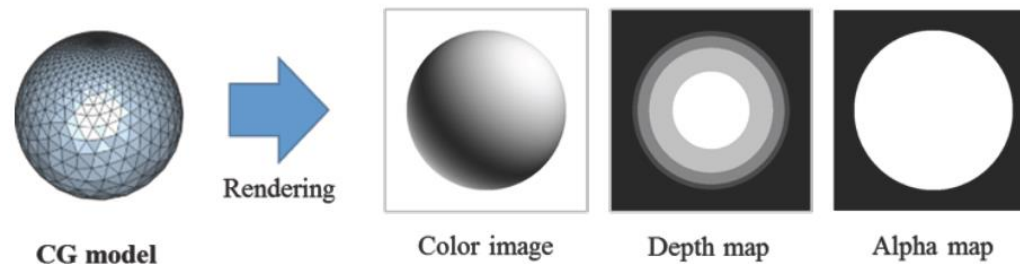


OpenHolo Algorithm Guide

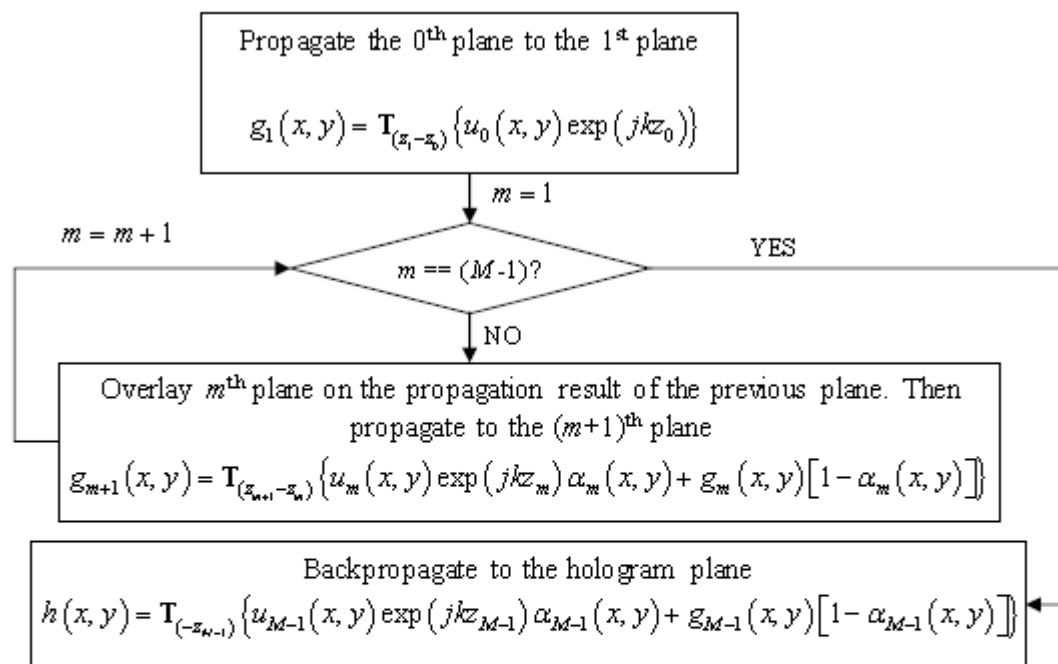
(Generation::Depth Map)

I. Depth Map Hologram Generation

- Implement the hologram generation method using depth map data.
- Improve the performance of the hologram generation method.
- Implemented on CPU and GPU.
- The original algorithm is modified in the way that can be easily implemented in parallel.



II. Algorithm

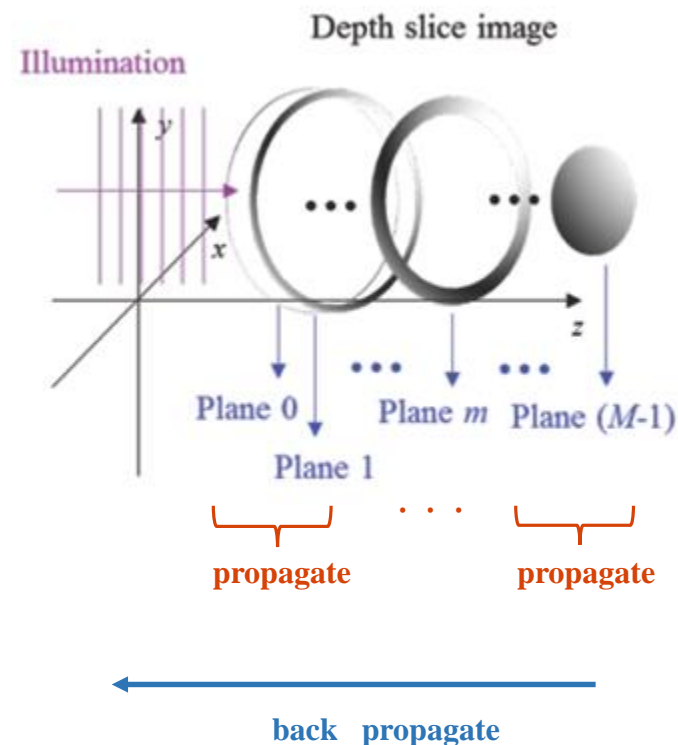


$T_z \{ \cdot \}$: Plane-to-plane propagation operator with propagation distance z

$u_m(x, y)$: Field distribution of the m^{th} plane

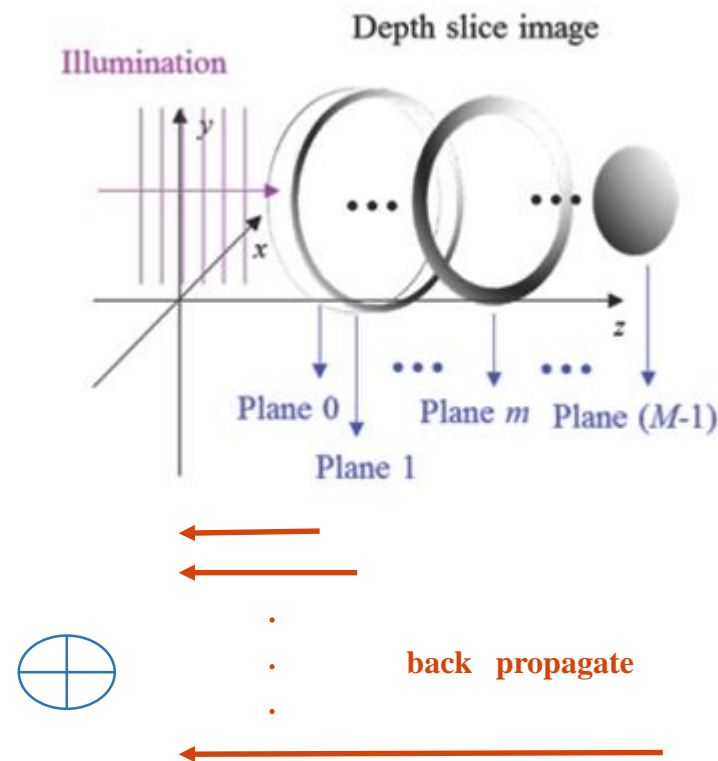
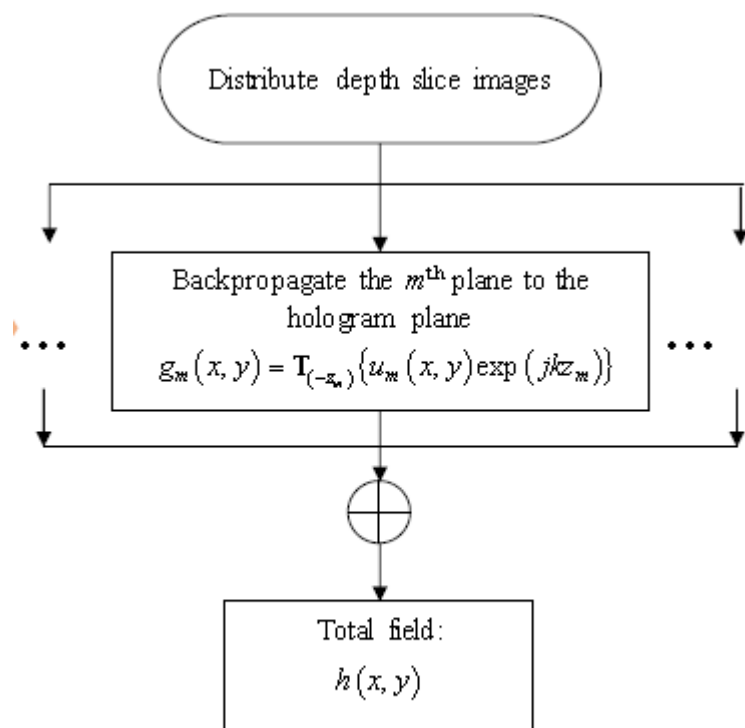
$\alpha_m(x, y)$: Alpha map of the m^{th} plane

M : Total number of depth slices



- Propagate from the previous depth plane to the current depth plane.
- At the last plane, back propagate to the hologram plane.

III. Modified Algorithm



- Back propagate each depth plane to the hologram plane.
- Accumulate the results of each propagation.

IV. Implementation S/W

Main Function GenerateHologram Procedure

