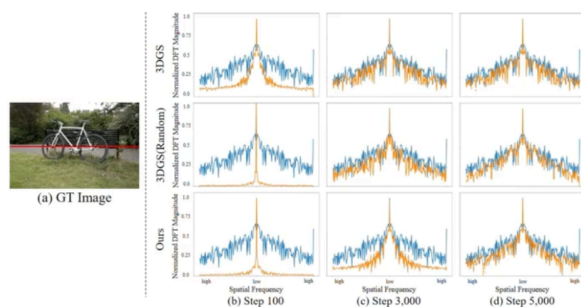
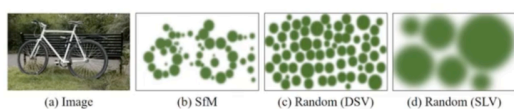


RAIN-GS

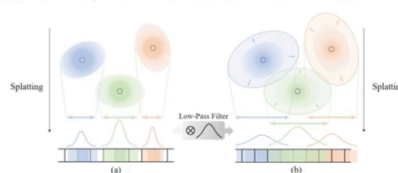
Relaxing Accurate Initialization Constraint for 3D Gaussian Splatting



3dgs 容易先入局部最优解，SfM初始化提供了低频近似



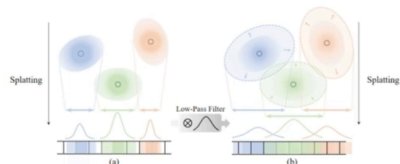
SLV初始化提供跨域优化的可能



$$G'_i(x) = e^{-\frac{1}{2}(x-\mu'_i)^T(\Sigma'_i+sI)^{-1}(x-\mu'_i)},$$

$$s = HW/9\pi N$$

调整低通滤波器的稀疏使得学习从低频到高频



$$G'_i(x) = e^{-\frac{1}{2}(x-\mu'_i)^T(\Sigma'_i+sI)^{-1}(x-\mu'_i)},$$

$$s = HW/9\pi N$$

调整低通滤波器的稀疏使得学习从低频到高频

$$\gamma_k(\mathbf{x}; \alpha) = w_k(\alpha) \cdot [\cos(2^k \pi \mathbf{x}), \sin(2^k \pi \mathbf{x})], \quad (12)$$

where the weight w_k is defined as

$$w_k(\alpha) = \begin{cases} 0 & \text{if } \alpha < k \\ \frac{1 - \cos((\alpha - k)\pi)}{2} & \text{if } 0 \leq \alpha - k < 1 \\ 1 & \text{if } \alpha - k \geq 1 \end{cases} \quad (13)$$

Barf中调整位置编码从粗到细学习