x_0

x_i

C_i α_i

T_i S_i

x_N

$\hat{C}_0$ $\hat{\alpha}_0$

soot colors   fire colors

Colormap

$T_i \rightarrow C_i$ Map temperature to color

$S_i \rightarrow \alpha_i$ Map soot density to opacity

Iteratively mix cell colors and opacities to form one color and opacity using:

$$\hat{C}_N = \hat{\alpha}_N = 0$$

For i=N-1, …, 0 :

$$\hat{C}_i = \hat{C}_{i+1} + (1 - \hat{\alpha}_{i+1})C_i$$

$$\hat{\alpha}_i = \hat{\alpha}_{i+1} + (1 - \hat{\alpha}_{i+1})\alpha_i$$

Image plane

Cast rays through each image plane pixel

Convert data along each ray to color and opacity

Combine colors and opacities and place on image plane