# CMC = Cell Monte Carlo

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A general idea for Monte Carlo radiative transfer speed up.

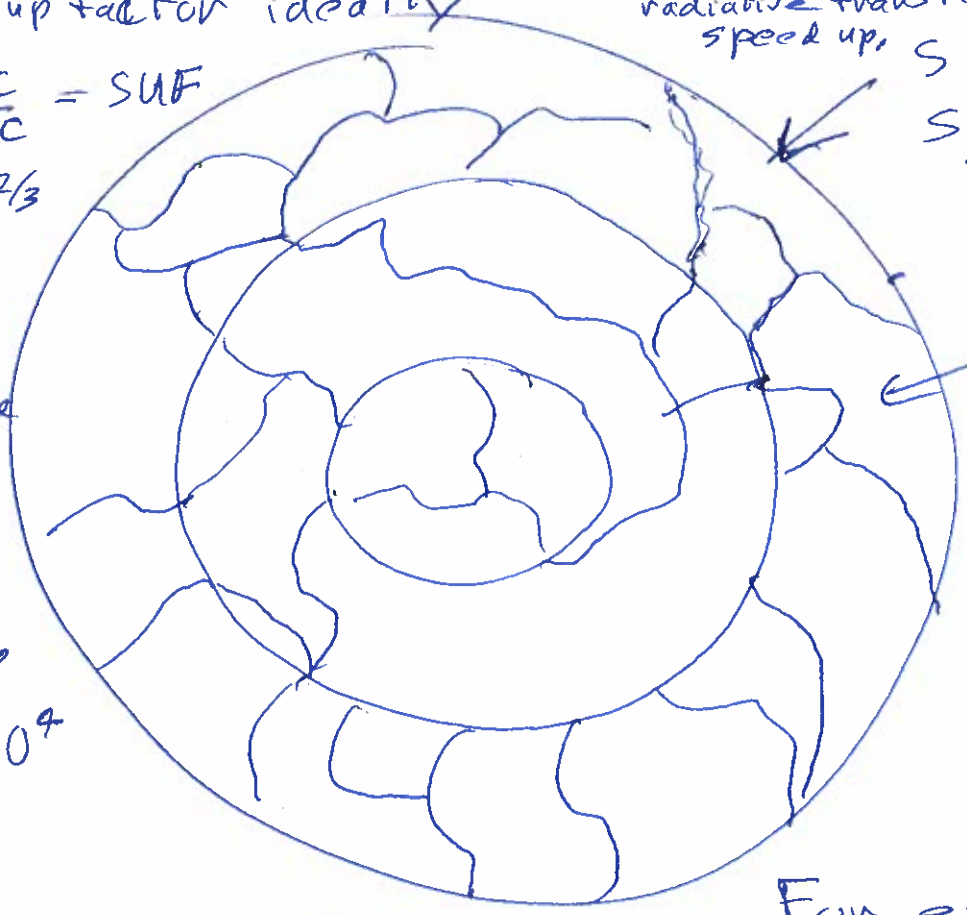
Speed up factor ideally

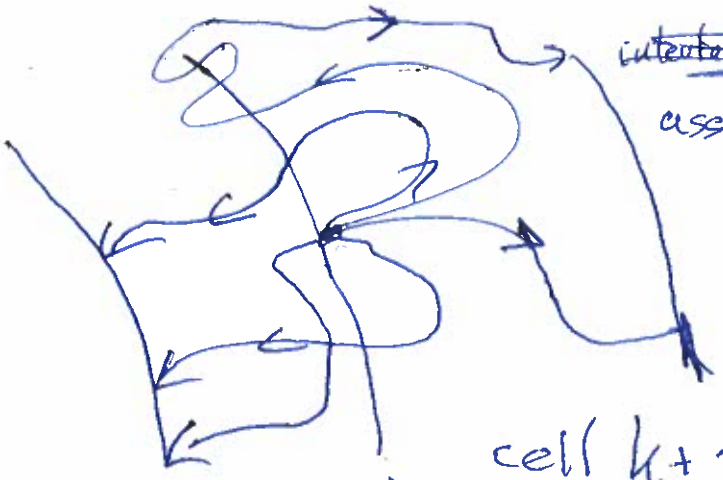
$= \frac{CMC}{OMC} = SUF$

$\propto \tau^{2/3}$

So if the atmosphere has optical depth $\tau = 10^6$,

$SUF = 10^4$




For every interface k, assemble a runtime list of photon packet trajectories.

1 $k_{final}$, $\epsilon$,
2 $\nu_{final}$, $\sigma_{final}$
3 polarization$_{final}$
⋮
4

You also need a CMC energy deposition array to deposit energy for the thermal state calculation, needed for a Lambda-iteration

After assembling all runtime lists, you propagate packets, but running sequentially thru the list as a packet arrives at each interface.