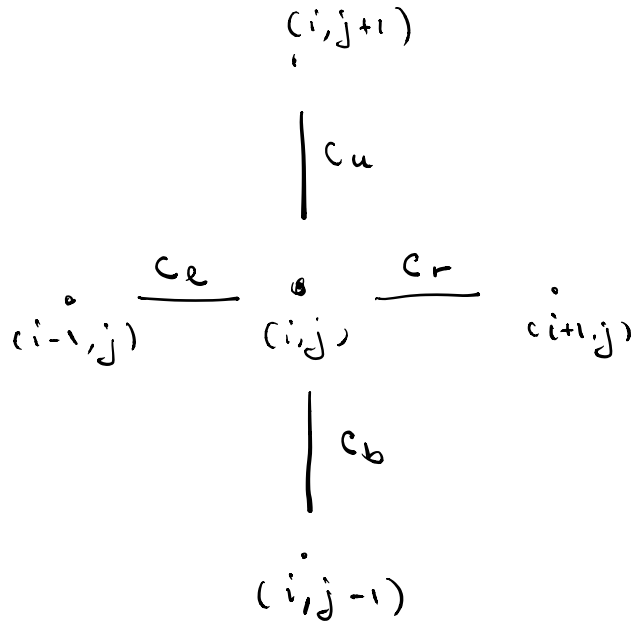
Basic equation for pressure at each node

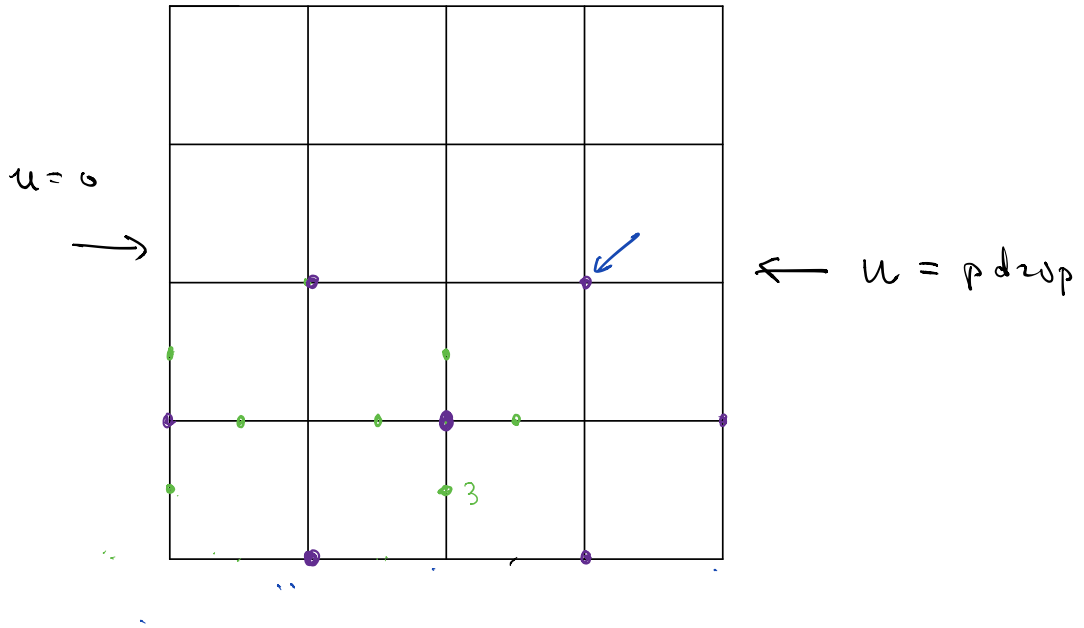


$$C_r\left(u_{i+1,j} - u_{ij}\right) + C_e\left(u_{i-1,j} - u_{ij}\right)$$

$$+ C_u\left(u_{i,j+1} - u_{ij}\right) + C_b\left(u_{i,j-1} - u_{ij}\right) = 0$$

Iterative scheme

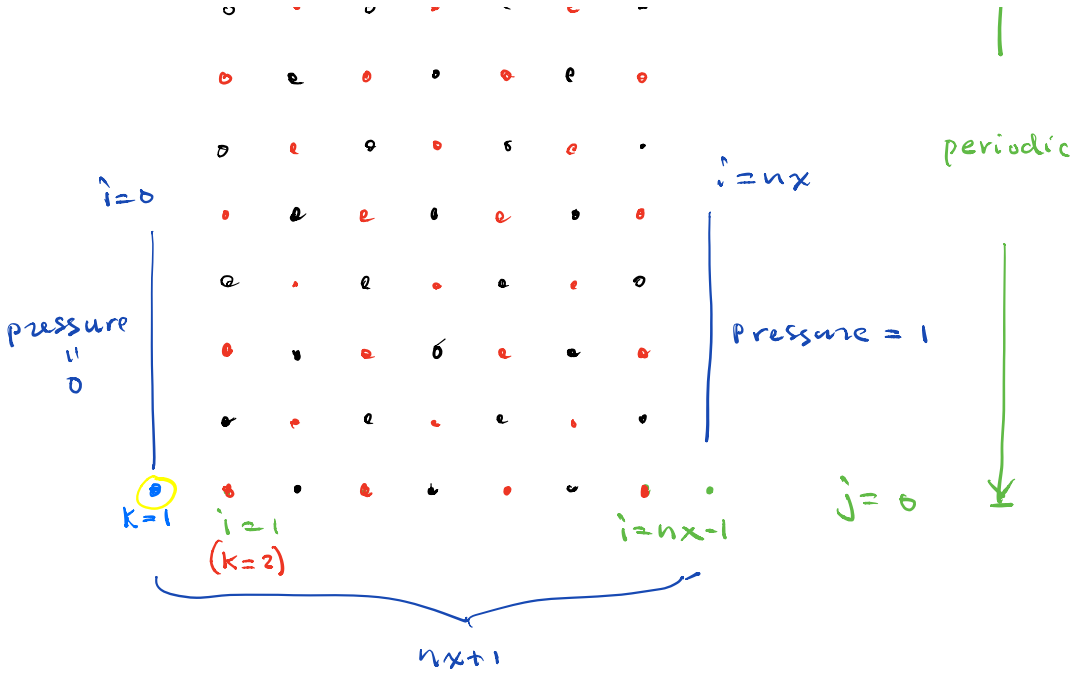
$$u_{ij} = \frac{1}{C_r + C_e + C_u + C_b}\left[C_r u_{i+1,j} + C_e u_{i-1,j} + C_u u_{i,j+1} + C_b u_{i,j-1}\right]$$

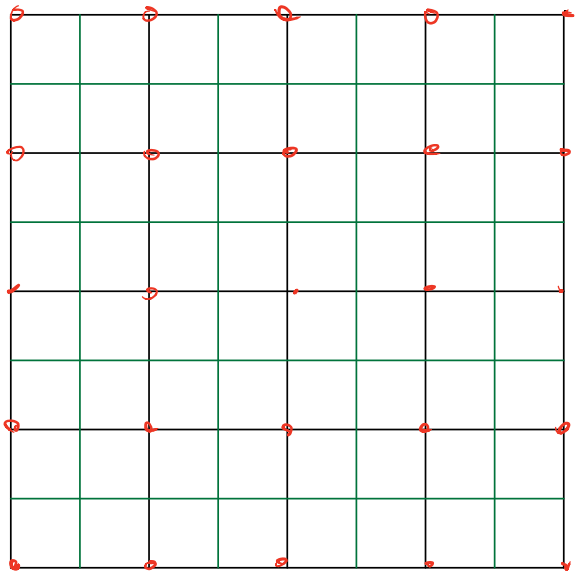


Red - black alternating iterations

red pts : only need black pts to update

black pts : only need red pts to update



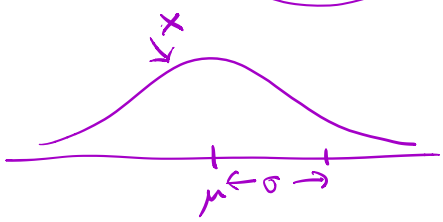


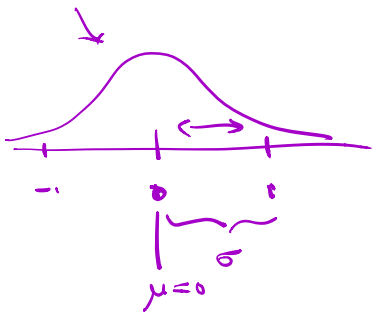
two overlapping grids

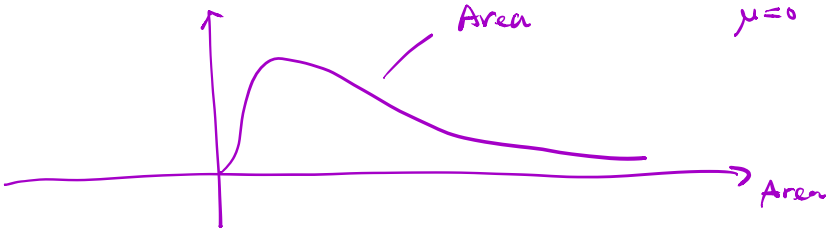
lognormal

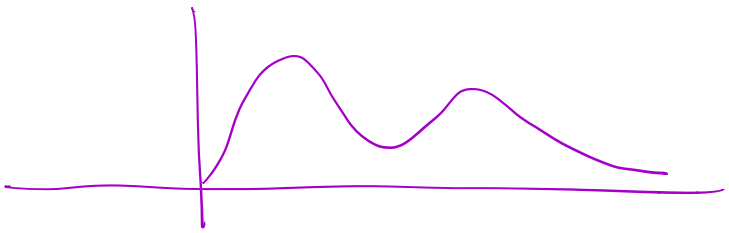
Area = $e^{\mu + \sigma z}$

z = Normal dist $(0, 1)$









bimodal dist

$a_1, a_2, \ldots, a_n$

sum = $a_1 + a_2 + \ldots + a_n$

```
sum = 0
for i = 1 : n
{ sum = sum + a_i }
end
```

$a_1, a_2, \ldots, a_n$

$b_1, b_2, \ldots, b_n$

$c_i = a_i + b_i$

```
( for i = 1 : n
```

$$\begin{cases} c(i) = a(i) + b(i) \\ \text{end} \end{cases} \iff c(:) = a(:) + b(:)$$

$$\Updownarrow$$

$$\boxed{c = a + b}$$

$$a_1 + a_3 + a_5 + a_7$$
$$b_1 + b_3 + b_5 + b_7$$

$$\Rightarrow \quad c_1 = a_1 + b_1$$
$$c_3 = a_3 + b_3$$
$$\vdots$$

$$c(1:2:7) = a(1:2:7) + b(1:2:7)$$