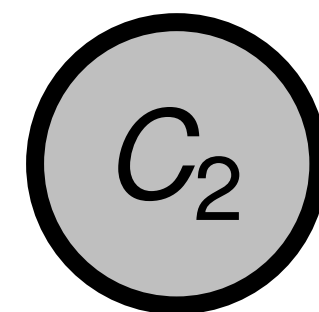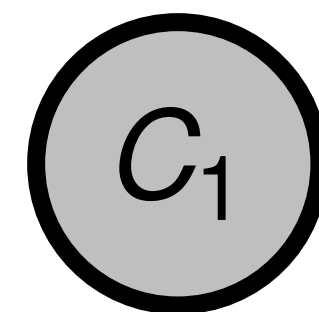# Problem considered

- Straight-line array of N vertical cylinders.
- Plane incident wave $\phi_{\text{inc}} = \varphi(x, y : \psi)$: $\varphi = \exp\{i\,k\,(x\,\cos\psi + y\,\sin\psi)\}$.
- Time-harmonic conditions at angular frequency ω.
- Reduce to 2D problem shown below: $k\,\tanh(k\,H) = \omega^2/g$.

$$\phi_{xx} + \phi_{yy} + k^2\,\phi = 0$$

ϕ_{inc}

ψ

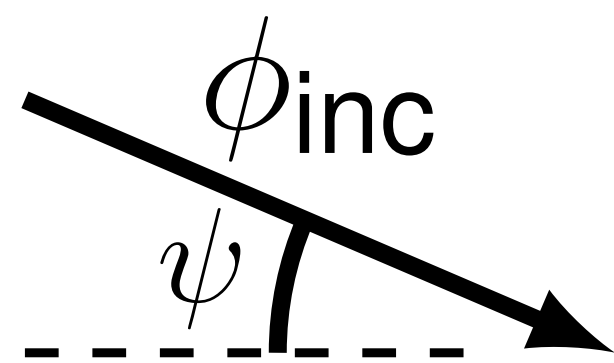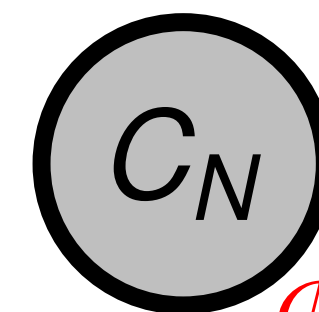C_1 $\quad$ C_2 $\quad$ C_3 $\quad$ $\cdots\cdots\cdots$ $\quad$ C_N

$\phi_n = 0$

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- Nondimensionalised

$$\phi_{xx} + \phi_{yy} + k^2\, \phi = 0$$