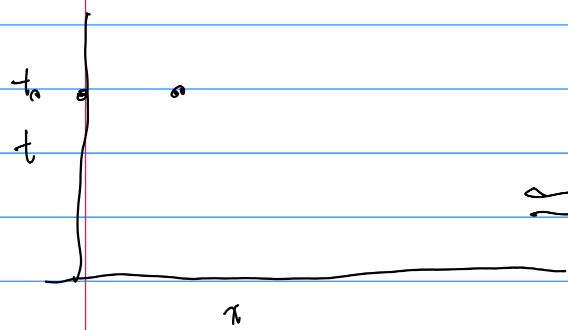
$$\frac{\partial f_n}{\partial t} + \alpha(n-6)\frac{\partial f_n}{\partial x} = A_{n\,n-1} f_{n-1} + A_{nn} f_n + A_{n\,n+1} f_{n+1}$$

$n_{min} \leq n \leq n_{max}$

$A_{n\,n-1} > 0, \quad A_{n\,n+1} > 0, \quad A_{nn} < 0$

$f_n(x,0) \geq 0 \qquad f_{n_0}(x,t_0) = 0$ for $x > 0 \qquad n_{min} < n_0 < n_{max}$



$$\frac{\partial f_{n_0}}{\partial x} = 0 ; \quad \frac{\partial f_{n_0}}{\partial t} = 0$$

$$\Rightarrow \quad \underset{(+)}{A_{n_0\,n_0-1}}\, f_{n_0-1} + \underset{(+)}{A_{n_0\,n_0+1}}\, f_{n_0+1} = 0$$

at t_0

$$\Rightarrow \quad f_{n_0-1} \equiv 0 \text{ and } f_{n_0+1} \equiv 0$$

all $f_n \equiv 0$ at t_0

system stagnates

Constraints

$$\frac{d}{dt} \sum (n-6) \int_0^\infty f_n \, dx = 0 \qquad \text{(Euler)}$$

$$\sum \int f_n \, x \, dx = \text{const}$$

$\Rightarrow$ A_{nk} are nonlinear, nonlocal functions of $\{f_n\}$