```
> restart; #1D convection-diffusion equation
  using UDS
```
```
> Convection:=(phi[P]*max(Fe,0)-phi[E]*max(-F
  e,0))-(phi[W]*max(Fw,0)-phi[P]*max(-Fw,0));
```
$$Convection := \phi_P \max(0, Fe) - \phi_E \max(0, -Fe)$$
$$- \phi_W \max(0, Fw) + \phi_P \max(0, -Fw)$$

```
> Diffusion:=Gamma*(phi[E]-phi[P])*dy/dx-Gamm
  a*(phi[P]-phi[W])*dy/dx;
```
$$Diffusion := \frac{\Gamma (\phi_E - \phi_P) \, dy}{dx} - \frac{\Gamma (\phi_P - \phi_W) \, dy}{dx}$$

```
> eq:=Convection-Diffusion;
```
$$eq := \phi_P \max(0, Fe) - \phi_E \max(0, -Fe) - \phi_W \max(0, Fw)$$
$$+ \phi_P \max(0, -Fw) - \frac{\Gamma (\phi_E - \phi_P) \, dy}{dx} + \frac{\Gamma (\phi_P - \phi_W) \, dy}{dx}$$

```
> A[E]:=-diff(eq,phi[E]);
```
$$A_E := \max(0, -Fe) + \frac{\Gamma \, dy}{dx}$$

```
> A[W]:=-diff(eq,phi[W]);
```
$$A_W := \max(0, Fw) + \frac{\Gamma \, dy}{dx}$$

```
> A[P]:= diff(eq,phi[P]);
```
$$A_P := \max(0, Fe) + \max(0, -Fw) + 2 \frac{\Gamma \, dy}{dx}$$

```
>
```