

Re: euler without d/dt? time-independent conservation law.

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- *From:* "Lane Straatman" <invalid@xxxxxxxxxxx>
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"Helmut Jarausch" <jarausch@xxxxxxxxxxxxxxxxxxxxxxxx> wrote in message news:54qj34F2237qnU1@xxxxxxxxxxxxxxxxxxxxxxxx

Phil Scadden wrote:

Looking to solve time-independent conservation law.
 $[f(u)]_x + [g(u)]_y = 0$

with initial condtns $u(x_0(t), y_0(t)) = u_0$

and boundary conditions $u(x_0, y)$ and $u(x, y_0)$

snip

let's rewrite your equation to

(*) $f_p(u)u_x + g_p(u)u_y = 0$ where $f_p(u)$ is the derivate of f at $u(x, y)$.

Now make the ansatz (characteristic) $y = y(x)$, then

(**) $d/dx (u(x, y(x))) = u_x + u_y y_p$ where $y_p = d/dx y$.

I'm having trouble with the notation. Can you describe further what you mean with "characteristic?" "Ansatz" makes more sense.

'u_x' I think wants to be "u sub x" but I can't divine what 'u_y*y_p' might be. Gruss, LS

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