

P/12

4/18/94  
DM

Tom,

In one moment I mentioned a hypothesis of:

MOVING PART OF A FUNCTION FROM THE PARTIAL DIFFERENTIAL EQUATION TO THE PARTIAL DIFFERENTIAL ITSELF.

IN FACT THIS IS NOT NEW. EQUATION 637, Pg 517, VOL. 13 OF THE BRIT. READS:

$$\widehat{\frac{\partial^2 u}{\partial x_j^2}}(x) = -x_j^2 \widehat{f}(x)$$

WOULD APPEAR TO BE ADAPTABLE TO THE NOTION NOT ONLY OF DIFFERENTIATING<sup>EN</sup> A CHARACTERISTIC OF ONE FUNCTION WITH RESPECT TO A CHARACTERISTIC OF ANOTHER FUNCTION BUT ALSO INCLUDING A PARTIAL DIFFERENTIAL TRANSFORM. THE DESCRIPTION OF EQ. 637 READS:

THE TRANSFORM OF THE SECOND ORDER PARTIAL DERIVATIVE OF  $u$  WITH RESPECT TO ONE VARIABLE ALL CONSIDERED AS A FUNCTION OF  $x$  IS THE PRODUCT OF THE NEGATIVE SQUARE OF THE VARIABLE TIMES THE TRANSFORM OF  $f_j(\dots)$ .

YOU MAY WANT TO DISCUSS THIS, I THINK IT MAY BE DEVELOPABLE.

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