

# *A Correction of the Paper "Non-Characteristic Cauchy Problems and Generalized Goursat Problems in $R^n$ "*

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I want to thank Karl Erik Sandvold, Oslo. He has pointed out to me that the boundary conditions in Theorem 3 [1] must be changed. Otherwise the theorem is false. We change them in the following way. Let the functions  $\varphi_i$  satisfy the conditions in the remark after Theorem 3. Substitute in (4.4)  $v$  by  $D^\beta u$ . Then we get a somewhat more general (4.8). Define

$$\gamma_i^{j'} = \beta_i, 1 \leq j < j', \gamma_i^{j'} = 0, j' \leq j \leq n.$$

Then (4.9) is written as

$$(4.9) \quad D^\gamma D^{\gamma'} u(x) = 0, \varphi_i(x) = 0, \gamma \leq \beta - \gamma^j,$$

$$\gamma_i < \beta_i, 1 \leq j \leq n, x \in A.$$

If we know  $D^\beta u$  and if (4.9) is true then (4.8) is true for every  $\alpha \leq \beta$ . Conversely, if (4.8) is true then (4.9) is satisfied. The boundary conditions in Theorem 3 should then be given by the new (4.9). Looking at the example by Chu and Diaz mentioned in the introduction of [1] this corresponds to giving the value of  $u(x, y, z)$  on  $x = 0$ , and  $y = 0$ , and the value of  $u_{xy}(x, y, z)$  on the third surface. It should be pointed out that also the noncharacteristic Cauchy problem can be written as a generalized Goursat problem. But then the boundary values remain unchanged. This is also true for the Goursat problem if  $\varphi_i = x_i, 1 \leq j \leq n$ . See [2].

## REFERENCES

- [1] J. PERSSON, Non-characteristic Cauchy problems and generalized Goursat problems in  $R^n$ , *J. Math. Mech.*, 18 (1969) 1087-1094.
- [2] ———, Theorems for continuous solutions of generalized Goursat problems, *Mathematicheskoe Obozrenie*, 24 (1969) 108-136.

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