SUBHARMONIC SOLUTION OF QUASILINEAR ELLIPTIC TYPE PDEs OF MATHEMATICAL PHYSICS FOR DISSIPATION OF INFORMATION

E. Kiss

Budapest University of Technology and Economics,
Institute of Physics, Department of Chemical Physics,
H-1521 Budapest, Budafoki street 8., Hungary
Telephone:(36-1)463-1341. Fax:(36-1) 463-1896
(e-mail: kiss_ee@goliat.eik.bme.hu)

Abstract

The new members of Mathematical Physics of heat conduction in stationary state with their subharmonic solution [1] originate from a real variational procedure named as "recency principle" [2]. As this variational principle is not a so-called "quasivariational" one therefore it is suitable to show irreversibility in stationary state process. The physical meaning is hear the minimum production of entropy (the minimum information loss) as the internal irreversible process source [3]. We show for the dissipation of information explanations from the set theory. Neighborhood, closure, boundary, cluster point, and accumulation point etc. are necessary to form well-posed boundary conditions. Irreversible non-equilibrium process causes energy degradation which can be interpreted both geometrically and mathematically as compared with the Laplace potential equation for conservative field. The energy degradation comes from information loss equivalence. For subharmonic solution we use Perron theorem.

References:
    [1] Kiss, E., AIP Conference Proceedings – November 16, 2004 – Volume 735, Issue 1, pp. 509-516.
    [2] Kiss, E., Periodica Polytechnica, Ser. Chem. Eng. Vol. **41**, No. 2, (1997) pp. 205-211.
    [3] Kiss, E., AIP Conference Proceedings – March 31, 2003 – Volume 659, Issue 1, pp. 104-123.