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EDITOR REMARK

The editorial board asks our readers to pay attention to the fact that due to an error the final part of an article published in Computational Problems of Electrical Engineering, vol. 3, no. 1 entitled:

Vasyl Tchaban **"Symmetry of energy"**

has to be read differently.

The incorrect part:

It has been also shown that such measurable characteristic as field strength can be calculated either as gradient of energy or gradient of co-energy (both lead to the same results [2]):

$$\vec{F}_E = \nabla \int_V \int_0^{\vec{D}} \vec{E}(\vec{D}) d\vec{D} dV = \nabla \int_V \int_0^{\vec{E}} \vec{D}(\vec{E}) d\vec{E} dV, \quad (16)$$

where $\mathbf{F}_E$ is the electric force.

It means that both energy and co-energy occupy their own positions. In the course of time we will see which one is dominant. In the meantime, the priority should be given to co-energy.

6. Conclusions

1. Since the kinetic co-energy in Hamilton-Ostro–gradskiy's principle is the only one which satisfies the energy principle of the least action, and satisfies the proposed principle of symmetry, then it should be treated as a true energy characteristic.

2. The kinetic energy and co-energy in nonlinear media are not equal to each other, but their gradients are the same! So their utilization ensures identical power characteristics of the field. Futhermore, accrding to the practical results they are interchangeable.

The correct part:

It has been also shown that such measurable characteristic as field strength can be calculated either as gradient of energy or gradient of co-energy (both lead to the same results [2]):

$$f_{kc\xi} = -\frac{\partial \vec{E}}{\partial \xi}(\mathbf{E}^{\partial} \mathbf{E} \vec{E}); \; f_{k\xi} = -\vec{E}\left(\mathbf{E}^s \frac{\partial \vec{E}}{\partial \xi}\right), \quad \xi = x, y, z, \quad (17)$$

where $\mathbf{E}^s$ is the matrix of static electric permeabilities of a nonlinear medium.

The force action of kinetic energy utilizes the differential permeability of a medium, and the force action of kinetic co-energy does the static one.

It means that both energy and co-energy occupy their own positions. Therefore, the phenomenon of energy that accompanies motion appears as kinetic co-energy, and shows up as kinetic energy and its corresponding power action.

In our next article we will show very interesting physical maintenance of kinetic co-energy.

6. Conclusion

1. The offered common expression (2) of potential energy and kinetic co-energy can be extended to physical nonlinear systems and fields in nonlinear medium with no limitations.

2. Since kinetic co-energy in Hamilton-Ostro–gradskiy's principle is the only one which satisfies both the energy principle of least action and the proposed principle of symmetry, it should be regarded as a true energy characteristic.