Philosophical and psychological basis of Natural Sciences

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1. Let us start with thinking about our thinking!

Square of Great Thoughts

WORLD - set of manifold phenomena

HUMAN -
spiritual
alive
being

LIFE - set of manifold human’s activities

SOCIETY - set of manifold humans

People aware world by parts (analyses), comparing and connecting them (synthesis). It means systems thinking.
2. What does it mean and why do we need Physics?

PHYSICS – fundamental scientific theory as scientific reflection of physical phenomena in human’s consciousness.

Universal hierarchical structure of human’s life activities

(Visualization of three level structure what contains general parts of every human’s activity: “cognition - consideration - behaviour”)

2. What does it mean and why do we need Physics?
PHYSICS - it is awareness of physical phenomena as the result of fundamental scientific research of these phenomena for applied scientific research to prepare reasonable use of them to satisfy corresponding our practical life needs.

3. There are fundamental, applied and educational Physics!

PHYSICS - scientific theory from practice for practice

Educational Physics - general and professional education

General educational physics for all
4. Now let us discuss principal content of Physics!

Square of PHYSICS principal concepts and general classification of motions

- **FACTOLOGY** (states of motion - space, time)
- **CAUSALITY** (interaction of bodies - force, energy)
- **BODIES**

1. Motion of bodies within surrounding/outer medium
2. Motion of inner medium within bodies
3. Motion of bodies’ inner and/or outer medium through bodies’ surface
4. Motion of bodies’ interactions

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Experimental and Mathematical Physics

**PHYSICS - theory**

- Mathematical modelling (**mathematical physics**)
- Cognition of physical phenomena
- Use of physical phenomena

**PRACTICE - physical phenomena**

- Experimental measurement of physical quantities (**experimental physics**)

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