

## “Quo Vadimus?” from Prof. Raoul Nigmatullin

### The questions addressed to future research

1. Is it possible to establish the **accurate** relationship between the fractional integral and fractal of the given symmetry in space? What is the geometrical/physical interpretation of this relationship?
2. Is there any chance to establish some new (**fundamental** ?!) conservation laws expressed in terms of the fractional operators?
3. How to justify the self-similar property of random sequences based on some fundamental principles or criteria? The primitive power-laws are not sufficient for that! The self-similarity principle is destroyed by randomness or not?
4. How to solve differential equations containing current /control variable in power-law exponent?

$$\left( \tau^{v(t)} D_{t_0}^{v(t)} + C \tau^{v(t)+j\Omega(t)} D_{t_0}^{v(t)+j\Omega(t)} + C^* \tau^{v(t)-j\Omega(t)} D_{t_0}^{v(t)-j\Omega(t)} \right) (P(t) - P(t_0)) + P(t) = 0$$