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Mathematical Models of workers potential function and some its applications

The report is devoted to construction and investigation of workers potential function. It is showed that this function is a solution of special class differential equation and it is represented in the form of

$$\varphi(a) + \frac{\displaystyle\int_a^{a_{\max}} B(\xi)\, e^{\delta(\xi - a)} d\xi}{\displaystyle\int_{a_{\min}}^{a_{\max}} \int_a^{a_{\max}} B(\xi)\, e^{\delta(\xi a)} d\xi da}$$

where a is an age of workers, $B(a)$ is the fatigue function. δ is a maximal real root of the equation

$$\int_0^{a\ \max} B(\xi) e^{-\delta\xi} d\xi = 1\,.$$

Such approach explains many unknown characteristics of economical processes (for example, oscillating character of workers number, an age factor in production processes and others).