

The *actuator* is an element of the system that directly affects the regulator of the object in order to restore the desired value of the controlled variable.

The regulated value in ARS depends on a number of factors determined by external conditions and internal properties of the system itself. Variables that influence the regulated values are called effects.

As a rule, two types of effects are applied to the OR: the regulating one – $U(t)$ and the disturbing $f(t)$ (fig. 5.4). The change in the controlled variable $y(t)$ is determined by both the regulating action $U(t)$ and the disturbing $f(t)$.

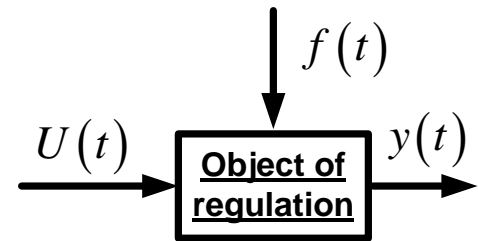


Fig. 4.4

Impacts applied to the OR in order to change the regulated value in accordance with the required law, as well as to compensate for the influence of disturbances on the nature of the change in the controlled variable, are called *regulating*. The regulating effect is created by the regulator and is formed under the action of the control algorithm (law), i.e. required law of change of control $U(t)$.

The control algorithm is the law of regulatory change. Dynamic properties and the form of static characteristics introduce distortions: the actual process will differ from the desired one. Therefore, the control algorithm will not be similar to the functioning algorithm. It will depend on the algorithm of functioning, dynamic properties and characteristics of the object, as well as various disturbing influences.

Disturbing influences are external influences on the object of regulation that cause a violation of the required functional connection between the setting effect and the controlled variable. Disturbing effects are divided into main and interference. The main ones are impacts that significantly affect the regulated value and are easily measurable. All other types of disturbances are called interference.

All elements included in the ARS, are interconnected in a certain way. The link, which provides the transmission of signals between elements in the direction of the object, is called direct, and the link between the output of the object and the