

System classifications

	I systems	PI systems	P systems
First-order systems	<ul style="list-style-type: none"> • Fluid flow • Speed control • Solution of equations 		<ul style="list-style-type: none"> • Dead fluid storage (flow in or flow out) • Position-control-by-velocity-modulation
Second-order systems		<ul style="list-style-type: none"> • Live fluid storage (both flow in and flow out) • Velocity-control-by-force-modulation • Inverted pendulum • Motorized wheel 	
Systems with series control loops	<ul style="list-style-type: none"> • Position-control-by force-modulation (position-control-by-velocity-modulation provides set point for velocity-control-by-force-modulation) 		
Systems with parallel control loops	<ul style="list-style-type: none"> • Temperature and humidity control - interdependent temperature and humidity control loops operating simultaneously • Position control where position is specified by two coordinates (e.g., x and y for a linear system, θ and ϕ for an angular system) - independent control loops (one for each coordinate) operating simultaneously 		