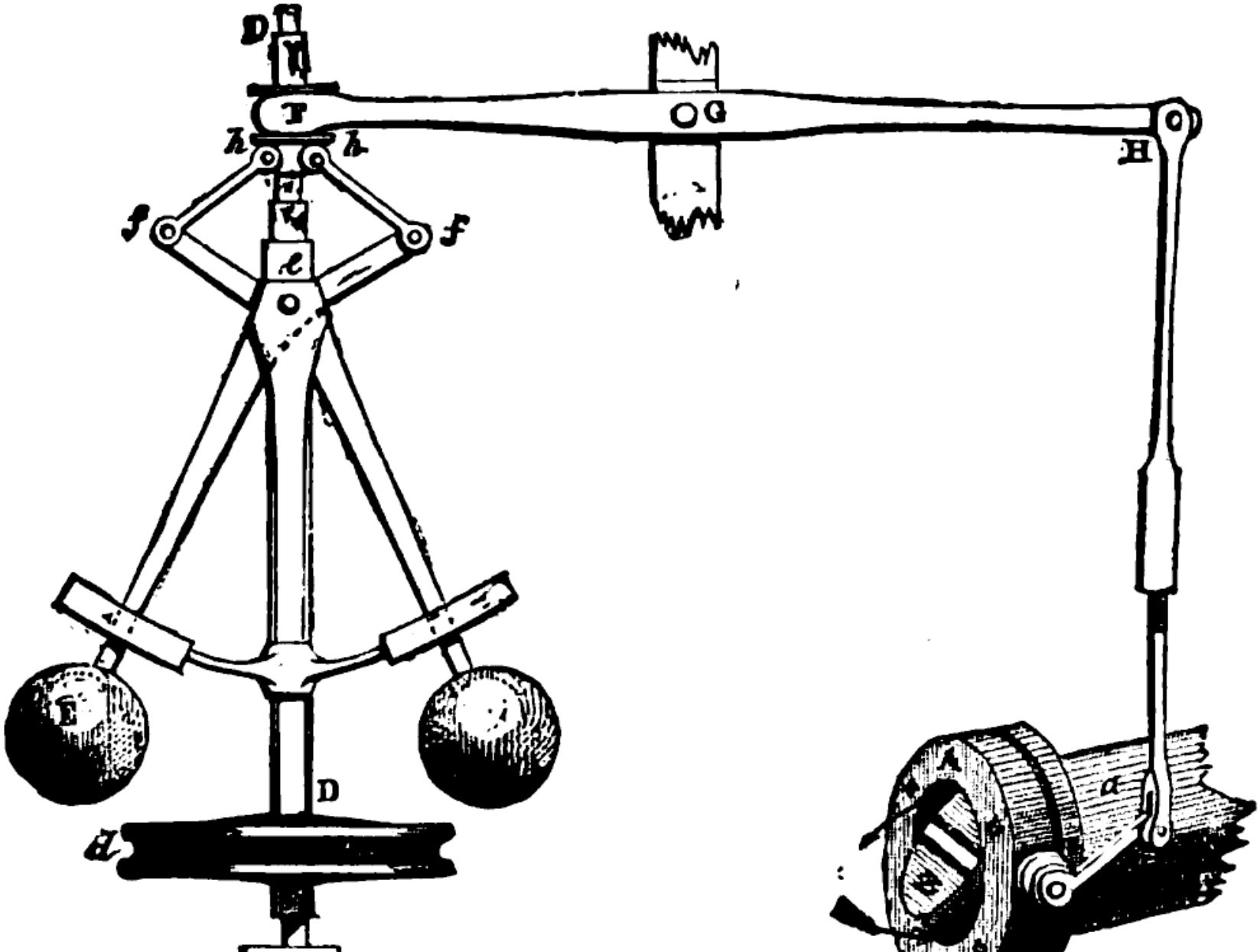
自动控制的基本概念

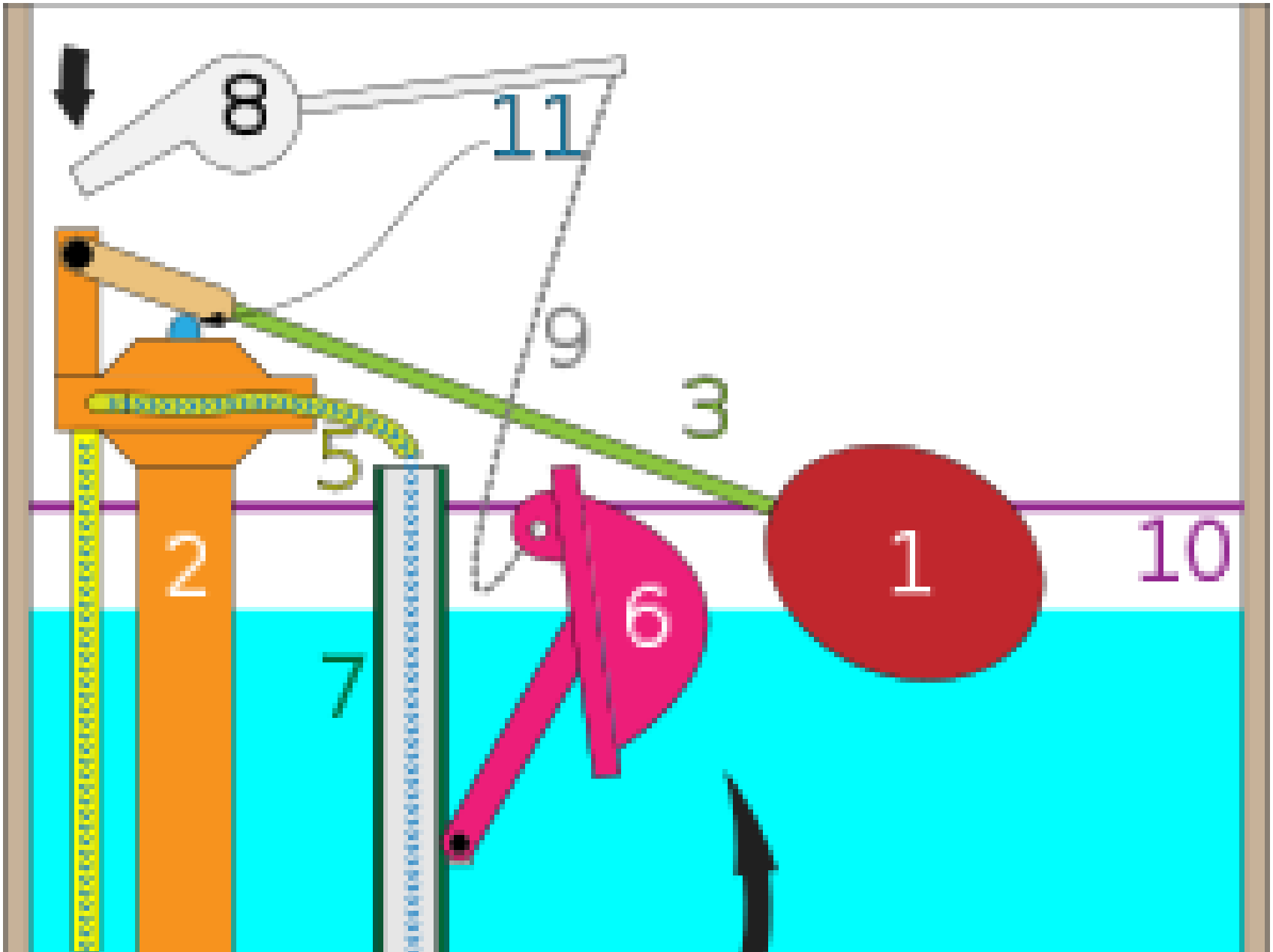
Outline

Topic

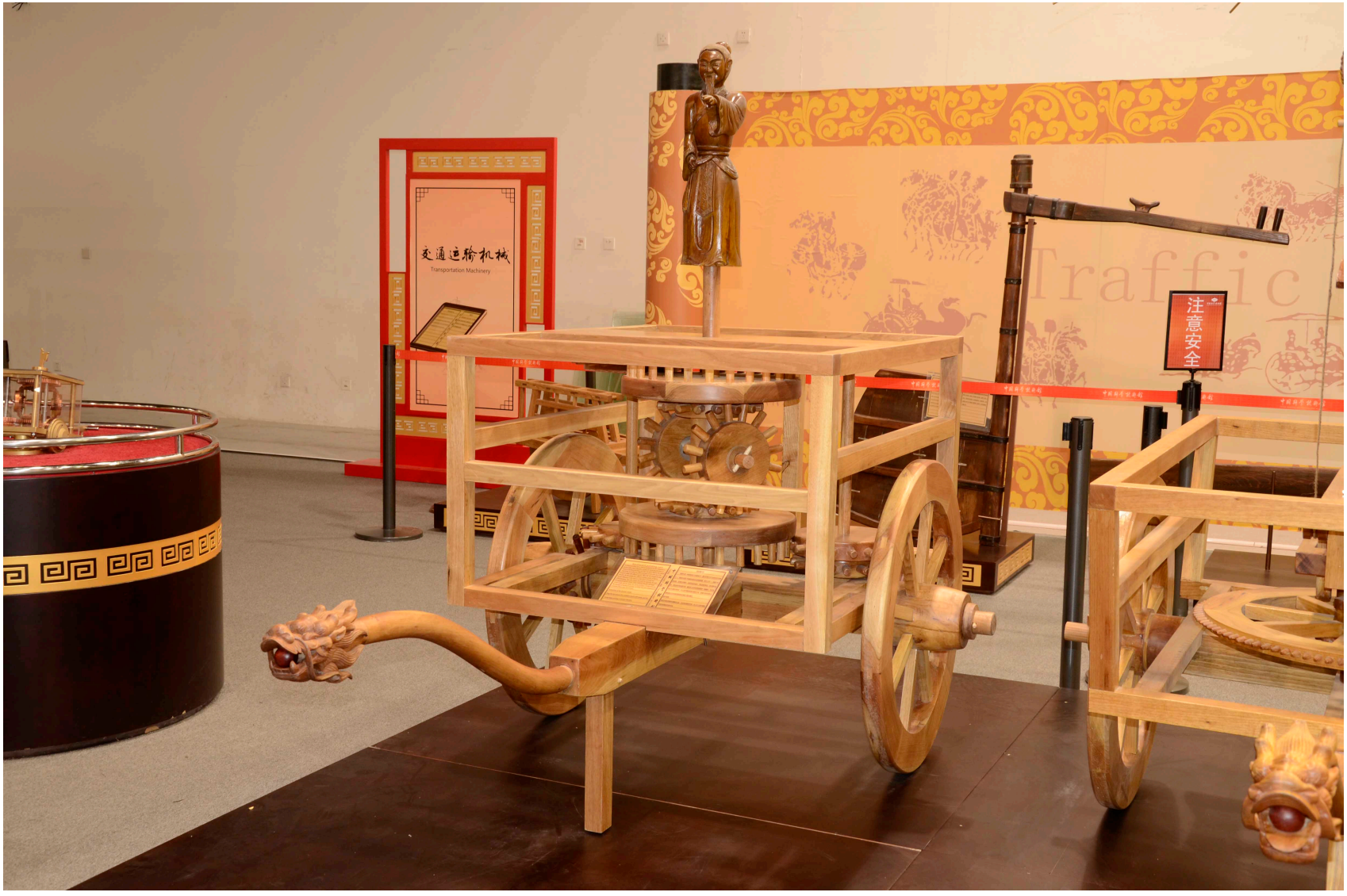
Centrifugal governor



Tolilet Valve



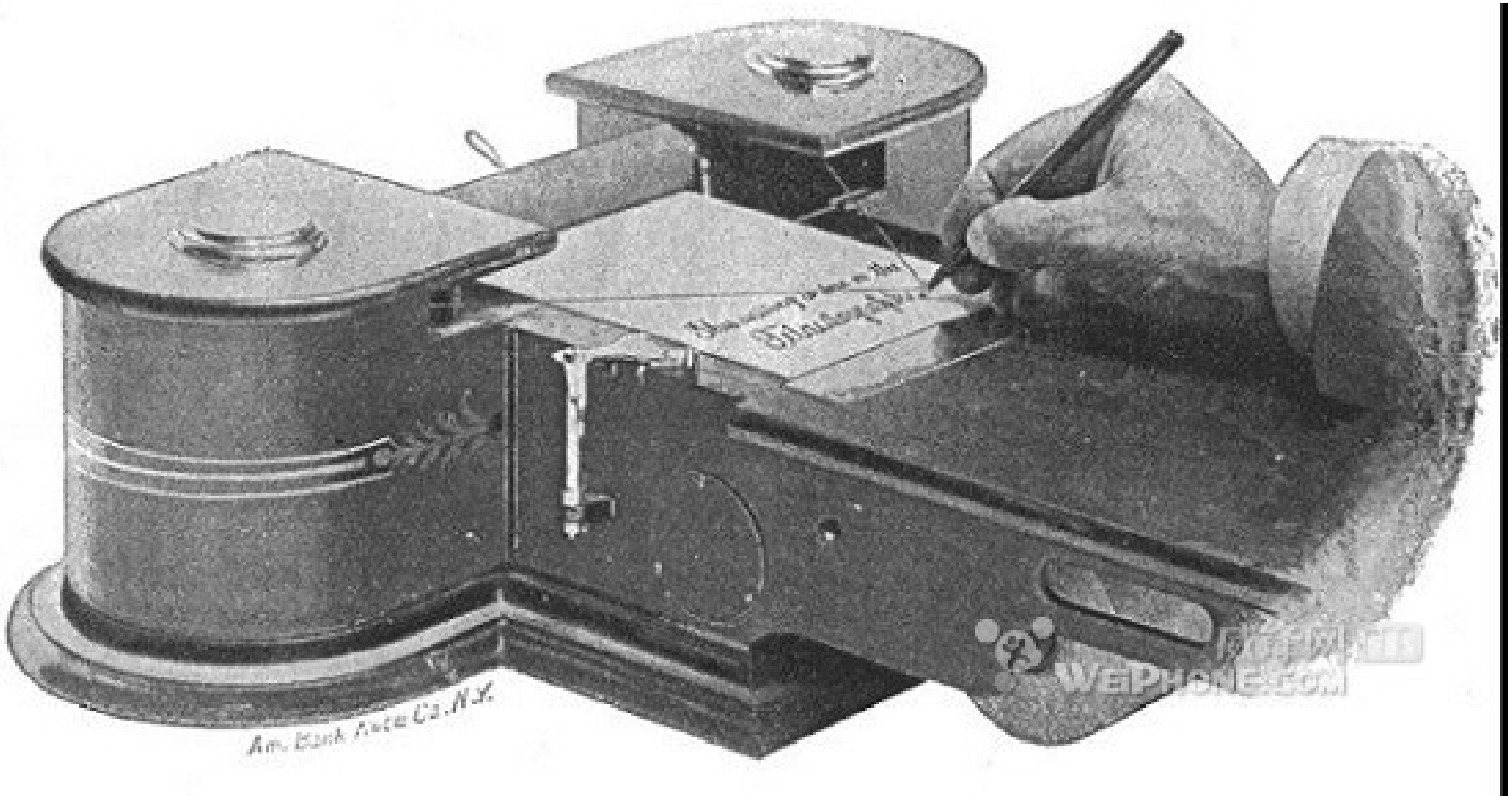
指南车



莲花漏

Windmil fantail

telautograph



控制理论的发展

- Pierre-Simon Laplace (1749-1827) invented the Z-transform in his work on probability theory, now used to solve discrete-time control theory problems. The Z-transform is a discrete-time equivalent of the Laplace transform which is named after him.
- Joseph Fourier (21 March 1768 – 16 May 1830) was a French mathematician and physicist born in Auxerre and best known for initiating the investigation of Fourier series and their applications to problems of heat transfer and vibrations. The Fourier transform and Fourier's Law are also named in his honour. Fourier is also generally credited with the discovery of the greenhouse effect.
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- Harold S. Black (1898–1983), invented the concept of negative feedback amplifiers in 1927. He managed to develop stable negative feedback amplifiers in the 1930s.
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- Walter Richard Evans (January 15, 1920 - July 10, 1999) was a noted American control theorist and the inventor of the root locus method in 1948.
- In control systems theory, the describing function (DF) method, developed by Nikolay Mitrofanovich Krylov and Nikolay Bogoliubov in the 1930s, and extended by Ralph Kochenburger is an approximate procedure for analyzing certain nonlinear control problems.

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Topic

自动控制

无人工直接参与的情况下，利用控制装置 (控制器) 使被控对象按照给定的规律变化。

自动控制理论

- 经典控制理论
- 现代控制理论

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2. 数学模型
3. 分析方法
    1. 时域分析法
    2. 根轨迹法
    3. 频域分析法
4. 设计方法
5. 离散系统分析
6. 典型非线性系统的分析

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