

Feedback Control: Some History

1868: James Clerk Maxwell publishes the first theoretical study of steam engine governors. By that time, there were more than 75,000 governors installed in England.

J.C. Maxwell, "On governors," Proc. Royal Society, no. 100, 1868

... [Stability of the governor] is mathematically equivalent to the condition that all the possible roots, and all the possible parts of the impossible roots, of a certain equation shall be negative. ...

I have not been able completely to determine these conditions for equations of a higher degree than the third; but I hope that the subject will obtain the attention of mathematicians.



The general stability criterion was found in 1876 by Edward John Routh and, in an equivalent form, independently by Adolf Hurwitz in 1895. We will study their criterion in ECE 486.