

ECE 441

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In control theory and stability, root locus is used to examine how the roots of a system will change by variation of a certain system parameter commonly a gain within a feedback system.

This is used as a criteria in field of control theory which can determine the stability of a system. The roots of the characteristic equation are plotted, the poles of the closed loop transfer function in the complex s -plane as a function of the gain parameter.

a) The entire row is added on -the row above!

In order to find out the stability in this case, we will find out an auxiliary equation which can be formed using the elements in the row above the zero's in the row array and after finding the auxiliary equation, we will differentiate it to obtain the element of the zero row if there is no change in the row array formed by the auxiliary equation then you would say the system given in this case is limited stable and in all other cases limited unstable.

b) To determine the poles on the s -axis:-

when the table is completed, the number of sign changes in the table will be the number of non-negative poles but sometimes the coefficients of the elements on the row table can sum up to zero and thus further calculations of the elements in the array is not possible.