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## (54) Title: ASSESSMENT OF POWER SYSTEMS

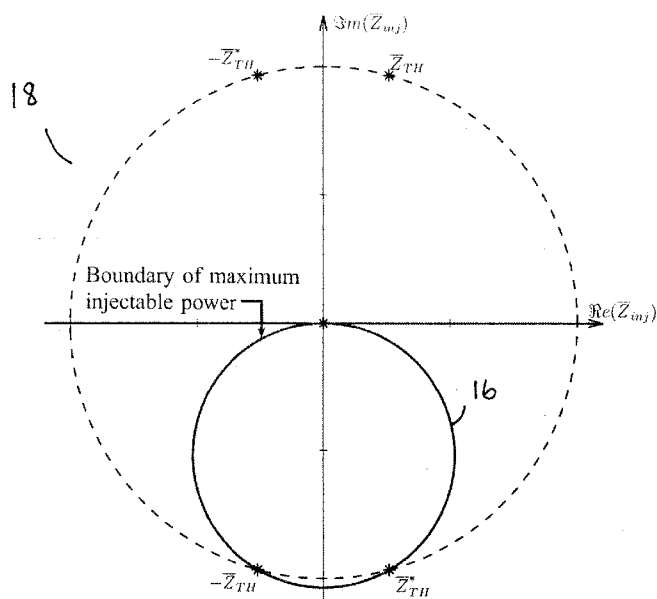


Fig. 3

(57) **Abstract:** The present invention relates to a method for assessment of a power system and an early warning system for a power system, the method being based on aperiodic small signal instabilities. The power system has a plurality of generators comprising one or more synchronous machines and is represented by a plurality of nodes of power injection, injecting power into a network having a plurality of nodes and branches. The method for assessment of the power system comprises determining a present state of the power system, calculating system Thevenin impedances from each node of power injection in the power system on the basis of the determined present state of the power system, calculating injection impedances from each node of power injection in the power system on the basis of the determined present state of the power system, determining a stability boundary for each generator based on the calculated system Thevenin impedances and the calculated injection impedances. Also a method of early warning for a power system is disclosed.

## INTERNATIONAL SEARCH REPORT

International application No

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## A. CLASSIFICATION OF SUBJECT MATTER

INV. H02J3/46

ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

H02J H02P G05D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-Internal, COMPENDEX

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages                                                                                                                                                                                                                                                                                   | Relevant to claim No.    |
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| Y         | abstract<br>page 108 - page 109<br>-----<br>-/--                                                                                                                                                                                                                                                                                                                     | 22,23                    |



Further documents are listed in the continuation of Box C.



See patent family annex.

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| C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT |                                                                                                                                                                                                                                                                                                                                              |                       |
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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/EP2012/060175

| Patent document<br>cited in search report | Publication<br>date | Patent family<br>member(s) | Publication<br>date |
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