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Reise

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(54) **METHOD FOR GENERATING 2 AND 3-DIMENSIONAL FLUID MESHES FOR STRUCTURAL/ACOUSTIC FINITE ELEMENT ANALYSIS IN INFINITE MEDIUM**

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(58) **Field of Search** **367/7, 11, 131; 703/2, 6, 9**

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,581,489 * 12/1996 Groothuis et al. .
5,664,064 * 9/1997 Nakao et al. .
5,729,670 * 3/1998 Strumolo et al. .
5,768,156 * 6/1998 Tautges et al. .
6,219,440 * 7/2001 Schaff et al. 703/11

* cited by examiner

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(57) **ABSTRACT**

The present invention relates to a method for generating 2 and 3-dimensional fluid meshes for structural/acoustic finite element analysis in an infinite medium. The method broadly comprises the steps of: enclosing a structure to be analyzed in a block of fluid; determining a bias factor and coordinates for the mesh; and generating at least one of a two dimensional and a three dimensional mesh using the coordinates and the bias factor.

13 Claims, 4 Drawing Sheets

