DEVICE, METHOD AND COMPUTER PROGRAM FOR PERFORMING LBM-BASED IMMISCIBLE MULTICOMPONENT FLUID ANALYSIS SIMULATION

ABSTRACT

According to an aspect of the present disclosure, a fluid analysis simulation device based on a lattice Boltzmann method (LBM) includes an input unit configured to receive data about an analysis target including a first fluid and a second fluid; a lattice generator configured to generate a calculation lattice system to calculate fluid component data and flow data and an output lattice system to output an analysis result based on the received data; a data calculator configured to calculate fluid component data and flow data of the analysis target based on the calculation lattice system; and a simulator configured to perform the fluid analysis simulation based on the output lattice system. The data calculator calculates fluid component data of an interface between the first fluid and the second fluid based on a first governing equation, and flow data of flow fields of the first fluid and the second fluid based on a second governing equation.

FIG. 1