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**Rogers**

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(54) **SPATIAL SIEVE TREE**

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See application file for complete search history.

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(57) **ABSTRACT**

A method, apparatus, and system is described for creating a spatial sieve tree which stores, manages, and manipulates multidimensional data by partitioning the bounds of the nodes of the tree, creating child nodes which each have defined bounds associated with a partitioned portion of their parent node(s) and may be further partitioned into additional levels of child nodes, and determining which level of the tree has the smallest size node in which a data object could wholly fit regardless of the data object's location in coordinate space and the one or more nodes of that determined level that could at least partially contain the data object based on the bounds of the one or more nodes and the data object's location in coordinate space.

**22 Claims, 9 Drawing Sheets**

