ABSTRACT

Method for encoding and decoding attributes of a point cloud~~, as well as encoder and decoder.~~. Therein, the ~~method for~~ encoding ~~attributes of points of a point cloud to generate a bitstream of compressed point cloud data, wherein the point cloud's geometry is represented by a voxel-based structure with a plurality of nodes having parent-child relationships by recursively splitting a volumetric space containing the point cloud into sub-volumes each associated with a node of the voxel-based structure,~~ method comprises ~~the steps of: Determining~~: determining a true transform coefficient by applying ~~Region-Adaptive Hierarchal Transform,~~ RAHT~~,~~ to the attributes of a present node; ~~Determining~~determining a difference between the attributes of a present parent node and each ~~node of~~of the parent nodes in a first set of parent nodes sharing a face or an edge with the present node~~, wherein the present parent node is the parent node of the present node; Selecting~~; selecting a second set from the first set of parent nodes according to the difference~~, wherein preferably the second set of parent nodes includes the present parent node; Determining~~; determining a predicted value for the attributes of the present node according to the attributes of the second set of parent nodes; ~~Determining~~determining a predicted transform coefficient by applying RAHT to the predicted value of the attributes of the present node; ~~Determining~~determining a residual from the true transform coefficient and the predicted transform coefficient; ~~and Encoding~~encoding the residual to produce encoded data of attributes of the point cloud for the bitstream.

Fig. 1