CLAIMS

1. A method for decoding a video, applied to a decoder and comprising:

decoding a bitstream to determine a first-type intra prediction mode parameter of a current block;

determining first prediction values of the current block according to the first-type intra prediction mode parameter;

determining a first transform parameter of the current block based on the first prediction values of the current block or the first-type intra prediction mode parameter of the current block;

determining, based on the first transform parameter, a second transform parameter for transforming the current block;

transforming, based on the second transform parameter, transform coefficients of the current block to determine residuals of the current block; and

determining reconstructed values of the current block based on the residuals and the first prediction values.

2. The method of claim 1, wherein determining the first transform parameter of the current block based on the first prediction values of the current block or the first-type intra prediction mode parameter of the current block comprises:

determining a first index of a second-type intra prediction mode of the current block based on the first prediction values of the current block; and

determining the first transform parameter of the current block based on the first index of the second-type intra prediction mode of the current block.

3. The method of claim 1, wherein determining the first transform parameter of the current block based on the first prediction values of the current block or the first-type intra prediction mode parameter of the current block comprises:

determining a first index of a second-type intra prediction mode of the current block based on the first-type intra prediction mode parameter; and

determining the first transform parameter of the current block based on the first index of the second-type intra prediction mode,

wherein the second-type intra prediction mode comprises at least one of: a planar mode, a direct current mode, or an angular intra prediction mode.

4. The method of claim 2 or 3, further comprising:

setting the first transform parameter of the current block to be equal to the first index of the second-type intra prediction mode of the current block,

wherein determining, based on the first transform parameter, the second transform parameter for transforming the current block comprises:

determining the second transform parameter corresponding to the first transform parameter according to a preset first mapping table between first transform parameters and second transform parameters,

wherein the second transform parameter comprises at least one of: a transform kernel index parameter, or a scanning sequence parameter of transform parameters, wherein the transform kernel index parameter indicates a transform kernel to be used in decoding the transform parameters of the current block, the scanning sequence parameter indicates a scanning sequence of the transform parameters, and the scanning sequence comprises a horizontal sequence and a vertical sequence.

5. The method of claim 2, wherein determining the first index of the second-type intra prediction mode of the current block based on the first prediction values of the current block comprises:

determining, based on the first prediction values, an index set of second-type intra prediction modes of the first prediction values; and

determining, based on the index set of the second-type intra prediction modes of the first prediction values, the first index of the second-type intra prediction mode of the current block, wherein the index set of the second-type intra prediction modes stores accumulative weight values corresponding to a portion or all of admissible values of indexes of the second-type intra prediction modes.

6. The method of claim 5, wherein determining, based on the first prediction values of the current block, the index set of the second-type intra prediction modes of the first prediction values comprises:

for each of a portion or all of the first prediction values, determining a gradient value in a horizontal direction and a gradient value in a vertical direction of a sample point corresponding to the first prediction value; and

determining the index set of the second-type intra prediction modes of the first prediction values based on gradient values in the horizontal direction and gradient values in the vertical direction of sample points,

wherein determining the index set of the second-type intra prediction modes of the first

prediction values based on gradient values in the horizontal direction and gradient values in the vertical direction of the sample points comprises:

determining a gradient angle value of the sample point according to the gradient value in the horizontal direction and the gradient value in the vertical direction of the sample point;

determining a second index of a second-type intra prediction mode corresponding to the gradient angle value according to the gradient angle value of the sample point; and

updating an accumulative weight value corresponding to the determined second index of the second-type intra prediction mode in the index set of the second-type intra prediction modes,

wherein determining the gradient angle value of the sample point according to the gradient value in the horizontal direction and the gradient value in the vertical direction of the sample point comprises:

determining the gradient angle value of the sample point based on the gradient value in the horizontal direction, the gradient value in the vertical direction of the sample point, and a preset function.

7. The method of claim 6, wherein the preset function is an arc-tangent function, and the arc-tangent function is a ratio of the gradient value in the horizontal direction of the sample point to the gradient value in the vertical direction of the sample point; and

determining the gradient angle value of the sample point based on the gradient value in the horizontal direction, the gradient value in the vertical direction of the sample point, and the preset function comprises:

processing, based on the arc-tangent function, the ratio of the gradient value in the horizontal direction of the sample point to the gradient value in the vertical direction of the sample point, to determine the gradient angle value of the sample point,

or wherein the preset function is a second mapping table of the gradient angle value of the sample point and the gradient value in the horizontal direction and the gradient value in the vertical direction of the sample point; and

determining the gradient angle value of the sample point based on the gradient value in the horizontal direction, the gradient value in the vertical direction of the sample point, and the preset function comprises:

inputting, into the second mapping table, the gradient value in the horizontal direction and the gradient value in the vertical direction of the sample point, or a ratio of the gradient value in the horizontal direction of the sample point to the gradient value in the vertical direction of the sample point, to output the gradient angle value of the sample point.

8. A method for encoding a video, applied to an encoder and comprising:

determining a first-type intra prediction mode parameter;

determining first prediction values of a current block according to the first-type intra prediction mode parameter, and calculating residuals between original values of the current block and the first prediction values;

determining a first transform parameter of the current block based on the first prediction values of the current block or the first-type intra prediction mode parameter of the current block;

determining, based on the first transform parameter, a second transform parameter for transforming the current block; and

transforming, based on the second transform parameter, the residuals to obtain transform coefficients of the current block.

9. The method of claim 8, wherein determining the first transform parameter of the current block according to the first prediction values of the current block or the first-type intra prediction mode parameter of the current block comprises:

determining a first index of a second-type intra prediction mode of the current block based on the first prediction values of the current block; and

determining the first transform parameter of the current block based on the first index of the second-type intra prediction mode of the current block.

10. The method of claim 8, wherein determining the first transform parameter of the current block based on the first prediction values of the current block or the first-type intra prediction mode parameter of the current block comprises:

determining a first index of a second-type intra prediction mode of the current block based on the first-type intra prediction mode parameter; and

determining the first transform parameter of the current block based on the first index of the second-type intra prediction mode.

11. The method of claim 9 or 10, wherein

the second-type intra prediction mode comprises at least one of: a planar mode, a direct current mode, or an angular intra prediction mode, and/or

wherein the method further comprises:

setting the first transform parameter of the current block to be equal to the first index of the second-type intra prediction mode of the current block.

12. The method of any one of claims 8 to 11, wherein determining, based on the first transform parameter, the second transform parameter for transforming the current block comprises:

determining the second transform parameter corresponding to the first transform parameter according to a preset first mapping table between first transform parameters and second transform parameters,

and/or wherein

the second transform parameter comprises at least one of: a transform kernel index parameter, or a scanning sequence parameter of transform parameters, wherein the transform kernel index parameter indicates a transform kernel to be used in decoding the transform parameters of the current block, the scanning sequence parameter indicates a scanning sequence of the transform parameters, and the scanning sequence comprises a horizontal sequence and a vertical sequence.

13. A decoder, comprising:

a memory configured to store a computer program executable on a processor; and

the processor configured to execute the computer program to implement the method of any one of claims 1 to 7.

14. An encoder, comprising:

a memory configured to store a computer program executable on a processor; and

the processor configured to execute the computer program to implement the method of any one of claims 8 to 12.

15. A computer-readable storage medium having stored thereon a computer program that, when executed by a processor, implements the method of any one of claims 1 to 7, or that, when executed by the processor, implements the method of any one of claims 8 to 12.