CLAIMS

1. A method of coding implemented by a decoding device, the method comprising:

obtaining a bitstream for a current picture partitioned into tiles, the tiles comprised in the picture being indexed according to a raster scan order;

obtaining a quantity of tiles in a tile row of the current picture;

obtaining a value of an address of a rectangular slice of the current picture, the address of the slice being an index of the leftmost tile of the topmost tile row of the slice;

obtaining a value of tileX according to the value of the address of the slice, wherein the value of tileX indicates a horizontal coordinate of the leftmost tile of the topmost tile row of the slice in units of tile columns, the horizontal coordinate being obtained according to a modulus operation between the value of the address of the slice and the quantity of tiles in the tile row of the current picture;

parsing an indication value for a slice width of the slice in units of tile columns from the bitstream for the current picture, when a difference value between the quantity of tiles in the tile row of the current picture and the value of tileX is not equal to a first threshold.

2. The method of claim 1, wherein the method further comprises:

setting the indication value for the slice width to a default value, when a difference value between the quantity of tiles in the tile row of the current picture and the value of tileX is equal to the first threshold.

3. The method of claim 2, wherein the default value indicates that the width of the slice comprises 1 tile column.

4. The method of any one of claims 1 to 3, wherein the value of the address of the slice specify an address of a top-left coordinate of the slice in tile index.

5. The method of any one of claims 1 to 4, wherein the method further comprises:

obtaining a quantity of tiles in a tile column of the current picture;

obtaining a value of tileY according to the value of the address of the slice, wherein the value of tileY indicates a vertical address in tile index;

parsing an indication value for a slice height from the bitstream for the current picture, when a difference value between the quantity of tiles in the tile column of the current picture and the value of the tileY is not equal to a second threshold.

6. The method of claim 5, wherein the method further comprises:

setting the indication value for the slice height to a preset value, when a difference value between the quantity of tiles in the tile column of the current picture and the value of tileY is equal to the second threshold.

7. The method of claim 5 or 6, wherein the obtaining a value of tileY according to the value of the address of the slice comprises:

obtaining the value of tileY according to the value of the address of the slice and the quantity of tiles in the tile row of the current picture.

8. The method of any one of claims 5 to 7, wherein the value of tileY is obtained according to an integer division operation between the value of the address of the slice and the quantity of tiles in the tile row of the current picture.

9. A method of coding implemented by a decoding device, the method comprising:

obtaining a bitstream for a current picture partitioned into tiles, the tiles comprised in the picture being indexed according to a raster scan order;

obtaining a quantity of tiles in a tile column of the current picture and a quantity of tiles in a tile row of the current picture;

obtaining a value of an address of a rectangular slice of the current picture, the address of the slice being an index of the leftmost tile of the topmost tile row of the slice;

obtaining a value of tileY according to the value of the address of the slice, wherein the value of tileY indicates a vertical coordinate of the leftmost tile of the topmost tile row of the slice in units of tile rows, the vertical coordinate being obtained according to an integer division operation between the value of the address of the slice and the quantity of tiles in the tile row of the current picture;

parsing an indication value for a slice height of the slice in units of tile rows from the bitstream for the current picture, when a difference value between the quantity of tiles in the tile column of the current picture and the value of tileY is not equal to a second threshold.

10. The method of claim 9, wherein the method further comprises:

setting the indication value for the slice height to a preset value, when a difference value between the quantity of tiles in the tile column of the current picture and the value of tileY is equal to the second threshold.

11. The method of claim 10, wherein the default value indicates that the height of the slice comprises 1 tile row.

12. The method of any one of claims 9 to 11, wherein the value of the address of the slice specify an address of a top-left coordinate of the slice in tile index.

13. A method of coding implemented by an encoding device, the method comprising:

obtaining a quantity of tiles in a tile row of a current picture partitioned into tiles, the tiles comprised in the picture being indexed according to a raster scan order;

obtaining a value of an address of a rectangular slice of the current picture, the address of the slice being an index of the leftmost tile of the topmost tile row of the slice;

obtaining a value of tileX according to the value of the address of the slice, wherein the value of tileX indicates a horizontal coordinate of the leftmost tile of the topmost tile row of the slice in units of tile columns, the horizontal coordinate being obtained according to a modulus operation between the value of the address of the slice and the quantity of tiles in the tile row of the current picture;

coding an indication value for a slice width of the slice in units of tile columns for the current picture to obtain a bitstream, when a difference value between the quantity of tiles in the tile row of the current picture and the value of tileX is not equal to a first threshold.

14. The method of claim 13, wherein the method further comprises:

obtaining a quantity of tiles in a tile column of the current picture;

obtaining a value of tileY according to the value of the address of the slice, wherein the value of tileY indicates a vertical address in tile index; coding an indication value for a slice height for the current picture into the bitstream, when a difference value between the quantity of tiles in the tile column of the current picture and the value of the tileY is not equal to a second threshold.

15. The method of claim 14, wherein the obtaining a value of tileY according to the value of the address of the slice comprises:

obtaining the value of tileY according to the value of the address of the slice and the quantity of tiles in the tile row of the current picture.

16. The method of claim 14 or 15, wherein the value of tileY is obtained according to an integer division operation between the value of the address of the slice and the quantity of tiles in the tile row of the current picture.

17. A method of coding implemented by an encoding device, the method comprising:

obtaining a quantity of tiles in a tile column of a current picture and a quantity of tiles in a tile row of the current picture partitioned into tiles, the tiles comprised in the picture being indexed according to a raster scan order;

obtaining a value of an address of a rectangular slice of the current picture, the address of the slice being an index of the leftmost tile of the topmost tile row of the slice;

obtaining a value of tileY according to the value of the address of the slice, wherein the value of tileY indicates a vertical coordinate of the leftmost tile of the topmost tile row of the slice in units of tile rows, the vertical coordinate being obtained according to an integer division operation between the value of the address of the slice and the quantity of tiles in the tile row of the current picture;

coding an indication value for a slice height of the slice in units of tile rows for the current picture to obtain a bitstream, when a difference value between the quantity of tiles in the tile column of the current picture and the value of the tileY is not equal to a second threshold.

18. A decoder (30) comprising processing circuitry for carrying out the method according to any one of claims 1 to 12.

19. An encoder comprising processing circuitry for carrying out the method according to any one of claims 13 to 17.

20. A computer program product comprising program code for performing the method according to any one of the claims 1 to 17 when executed on a computer or a processor.

21. A decoder, comprising:

one or more processors; and

a non-transitory computer-readable storage medium coupled to the processors and storing programming for execution by the processors, wherein the programming, when executed by the processors, configures the decoder to carry out the method according to any one of the claims 1 to 12.

22. An encoder, comprising:

one or more processors; and

a non-transitory computer-readable storage medium coupled to the processors and storing programming for execution by the processors, wherein the programming, when executed by the processors, configures the decoder to carry out the method according to any one of the claims 13 to 17.

23. A non-transitory computer-readable medium carrying a program code which, when executed by a computer device, causes the computer device to perform the method of any one of the claims 1 to 17.

24. A video data decoding device, comprising:

a non-transitory memory storage, configured to store video data in a form of a bitstream; and

a video decoder, configured to perform any of the methods according to the claims 1 to 12.

25. A video data encoding device, comprising:

a non-transitory memory storage, configured to store video data in a form of a bitstream; and a video encoder, configured to perform any of the methods according to the claims 13 to 17.

26. A non-transitory storage medium comprising a bitstream generated by performing the steps of:

obtaining a quantity of tiles in a tile row of a current picture partitioned into tiles, the tiles comprised in the picture being indexed according to a raster scan order;

obtaining a value of an address of a rectangular slice of the current picture, the address of the slice being an index of the leftmost tile of the topmost tile row of the slice;

obtaining a value of tileX according to the value of the address of the slice, wherein the value of tileX indicates a horizontal coordinate of the leftmost tile of the topmost tile row of the slice in units of tile columns, the horizontal coordinate being obtained according to a modulus operation between the value of the address of the slice and the quantity of tiles in the tile row of the current picture;

coding an indication value for a slice width of the slice in units of tile columns for the current picture into the bitstream, when a difference value between the quantity of tiles in the tile row of the current picture and the value of tileX is not equal to a first threshold.

27. A non-transitory storage medium comprising a bitstream generated by performing the steps of:

obtaining a quantity of tiles in a tile column of a current picture and a quantity of tiles in a tile row of the current picture partitioned into tiles, the tiles comprised in the picture being indexed according to a raster scan order;

obtaining a value of an address of a rectangular slice of the current picture, the address of the slice being an index of the leftmost tile of the topmost tile row of the slice;

obtaining a value of tileY according to the value of the address of the slice, wherein the value of tileY indicates a vertical coordinate of the leftmost tile of the topmost tile row of the slice in units of tile rows, the vertical coordinate being obtained according to an integer division operation between the value of the address of the slice and the quantity of tiles in the tile row of the current picture;

coding an indication value for a slice height of the slice in units of tile rows for the current picture into the bitstream, when a difference value between the quantity of tiles in the tile column of the current picture and the value of tileY is not equal to a second threshold.

28. A video decoding apparatus, comprising:

an obtaining module, configured to obtain a bitstream for a current picture partitioned into tiles, the tiles comprised in the picture being indexed according to a raster scan order;

the obtaining module, further configured to obtain a quantity of tiles in a tile row of the current picture and obtain a value of an address of a rectangular slice of the current picture, the address of the slice being an index of the leftmost tile of the topmost tile row of the slice;

a calculating module, which is configured to obtain a value of tileX according to the value of the address of the slice, wherein the value of tileX indicates a horizontal coordinate of the leftmost tile of the topmost tile row of the slice in units of tile columns, the horizontal coordinate being obtained according to a modulus operation between the value of the address of the slice and the quantity of tiles in the tile row of the current picture;

a parsing module, which is configured to parse an indication value for a slice width of the slice in units of tile columns from the bitstream for the current picture, when a difference value between the quantity of tiles in the tile row of the current picture and the value of tileX is not equal to a first threshold.

29. The video decoding apparatus of claim 28, wherein the obtaining module, the calculating module and the parsing module are further configured to perform the method according to any one of the claims 2 to 8.

30. A video decoding device, comprising:

an obtaining module, configured to obtain a bitstream for a current picture partitioned into tiles, the tiles comprised in the picture being indexed according to a raster scan order;

the obtaining module, further configured to obtain a quantity of tiles in a tile column of the current picture and a quantity of tiles in a tile row of the current picture and obtain a value of an address of a rectangular slice of the current picture, the address of the slice being an index of the leftmost tile of the topmost tile row of the slice;

a calculating module, configured to obtain a value of tileY according to the value of the address of the slice, wherein the value of tileY indicates a vertical coordinate of the leftmost tile of the topmost tile row of the slice in units of tile rows, the vertical coordinate being obtained according to an integer division operation between the value of the address of the slice and the quantity of tiles in the tile row of the current picture;

a parsing module, which is configured to parse an indication value for a slice height of the slice in units of tile rows from the bitstream for the current picture, when a difference value between the quantity of tiles in the tile column of the current picture and the value of tileY is not equal to a second threshold.

31. The video decoding apparatus of claim 30, wherein the obtaining module, the calculating module and the parsing module are further configured to perform the method according to any one of the claims 10 to 12.

32. A video encoding device, comprising:

an obtaining module, configured to obtain a quantity of tiles in a tile row of a current picture partitioned into tiles, the tiles comprised in the picture being indexed according to a raster scan order; the obtaining module, further configured to obtaining a value of an address of a rectangular slice of the current picture, the address of the slice being an index of the leftmost tile of the topmost tile row of the slice;

a calculating module, configured to obtain a value of tileX according to the value of the address of the slice, wherein the value of tileX indicates a horizontal coordinate of the leftmost tile of the topmost tile row of the slice in units of tile columns, the horizontal coordinate being obtained according to a modulus operation between the value of the address of the slice and the quantity of tiles in the tile row of the current picture;

a coding module, configured to code an indication value for a slice width of the slice in units of tile columns into a bitstream for the current picture, when a difference value between the quantity of tiles in the tile row of the current picture and the value of tileX is not equal to a first threshold.

33. The video encoding apparatus of claim 32, wherein the obtaining module, the calculating module and the coding module are further configured to perform the method according to any one of the claims 14 to 16.

34. A video encoding device, comprising:

an obtaining module, configured to obtain a quantity of tiles in a tile column of a current picture and a quantity of tiles in a tile row of the current picture partitioned into tiles, the tiles comprised in the picture being indexed according to a raster scan order;

the obtaining module, further configured to obtain a value of an address of a rectangular slice of the current picture, the address of the slice being an index of the leftmost tile of the topmost tile row of the slice;

a calculating module, configured to obtain a value of tileY according to the value of the address of the slice, wherein the value of tileY indicates a vertical coordinate of the leftmost tile of the topmost tile row of the slice in units of tile rows, the vertical coordinate being obtained according to an integer division operation between the value of the address of the slice and the quantity of tiles in the tile row of the current picture;

a coding module, configured to code an indication value for a slice height of the slice in units of tile rows into a bitstream for the current picture, when a difference value between the quantity of tiles in the tile column of the current picture and the value of tileY is not equal to a second threshold.