

CLAIMS

1. A method for predicting a video colour component, applied to a decoder and comprising:
 - acquiring a first colour component neighboring reference value and a first colour component reconstructed value corresponding to a current block, wherein the first colour component neighboring reference value represents a first colour component parameter corresponding to a neighboring reference sample of the current block, and the first colour component reconstructed value represents one or more reconstructed parameters of a first colour component corresponding to the current block;
 - determining a weight coefficient corresponding to the neighboring reference sample;
 - determining a scaling factor according to the weight coefficient and the first colour component neighboring reference value; and
 - obtaining a second colour component predicted value corresponding to the current block based on a linear model corresponding to the scaling factor.
2. The method of claim 1, wherein determining the weight coefficient corresponding to the neighboring reference sample comprises:
 - determining the weight coefficient according to a correlation between the current block and the neighboring reference sample.
3. The method of claim 1, before determining the scaling factor according to the weight coefficient and the first colour component neighboring reference value, further comprising:
 - acquiring a second colour component neighboring reference value corresponding to the current block, the second colour component neighboring reference value being a second colour component parameter corresponding to the neighboring reference sample and different from the first colour component parameter.
4. The method of claim 3, wherein determining the scaling factor according to the weight coefficient and the first colour component neighboring reference value comprises:
 - inputting the weight coefficient, the first colour component neighboring reference value and the second colour component neighboring reference value to a preset factor calculation model to obtain the scaling factor.

5. The method of claim 3, before obtaining the second colour component predicted value corresponding to the current block based on the linear model corresponding to the scaling factor, further comprising:

acquiring a second colour component estimated value corresponding to the current block, wherein the second colour component estimated value is obtained by performing component prediction according to a second colour component corresponding to the current block.

6. The method of claim 4, wherein obtaining the second colour component predicted value corresponding to the current block based on the linear model corresponding to the scaling factor comprises:

obtaining the second colour component predicted value based on the linear model corresponding to the scaling factor and the first colour component reconstructed value.

7. The method of claim 5, wherein obtaining the second colour component predicted value corresponding to the current coding block based on the linear model corresponding to the scaling factor comprises:

obtaining the second colour component predicted value according to the scaling factor and the second colour component estimated value.

8. The method of claim 1, further comprising:

setting weight coefficients of part of reference samples corresponding to part of neighboring reference values as zero, wherein position correlations between the current block and the part of reference samples do not meet a preset threshold; or,

removing part of reference samples from the neighboring reference samples, wherein position correlations between the current block and the part of reference samples do not meet a preset threshold; or

performing screening on the neighboring reference samples.

9. The method of claim 8, wherein performing screening on the neighboring reference samples comprises:

performing downsampling on the neighboring reference samples to determine part of reference samples.

10. The method of claim 1, wherein neighboring reference samples comprise at least one of an upper reference sample of the current block, an upper-left reference sample of the current block or a left reference sample of the current block; and

the neighboring reference samples further comprise at least one of an upper-right reference sample of the current block or a bottom-left reference sample of the current block.

11. The method of claim 1, wherein the scaling factor is a coefficient of the linear model, and the linear model is configured for predicting a second colour component according to the first colour component.

12. A decoder, comprising an acquisition section and a determination section, wherein

the acquisition section is configured to acquire a first colour component neighboring reference value and a first colour component reconstructed value corresponding to a current block, wherein the first colour component neighboring reference value represents a first colour component parameter corresponding to a neighboring reference sample of the current block, and the first colour component reconstructed value represents one or more reconstructed parameters of a first colour component corresponding to the current block;

the determination section is configured to determine a weight coefficient corresponding to the neighboring reference sample and determine a scaling factor according to the weight coefficient and the first colour component neighboring reference value; and

the acquisition section is further configured to obtain a second colour component predicted value corresponding to the current block based on a linear model corresponding to the scaling factor.

13. The decoder of claim 12, wherein the determination section is configured to:

determine the weight coefficient according to a correlation between the current block and the neighboring reference sample.

14. The decoder of claim 12, wherein the acquisition section is configured to, before the scaling factor is determined according to the weight coefficient and the first colour component neighboring reference value,

acquire a second colour component neighboring reference value corresponding to the current block, the second colour component neighboring reference value being a second colour component parameter corresponding to the neighboring reference sample and different

from the first colour component parameter.

15. The decoder of claim 14, wherein the determination section is configured to:

input the weight coefficient, the first colour component neighboring reference value and the second colour component neighboring reference value to a preset factor calculation model to obtain the scaling factor; and

the acquisition section is further configured to obtain the second colour component predicted value based on the linear model corresponding to the scaling factor and the first colour component reconstructed value.

16. The decoder of claim 14, wherein the acquisition section is configured to, before obtaining the second colour component predicted value corresponding to the current block based on the linear model corresponding to the scaling factor,

acquire a second colour component estimated value corresponding to the current block, wherein the second colour component estimated value is obtained by performing component prediction according to a second colour component corresponding to the current block.

17. The decoder of claim 12, further comprising a setting section, configured to set weight coefficients of part of reference samples corresponding to part of neighboring reference values as zero, wherein position correlations between the current block and the part of reference samples do not meet a preset threshold;

wherein the determination section is configured to:

remove part of reference samples from the neighboring reference samples, wherein position correlations between the current block and the part of reference samples do not meet a preset threshold; or,

perform screening on the neighboring reference samples.

18. The decoder of claim 17, wherein the determination section is configured to:

perform downsampling on the neighboring reference samples to determine part of reference samples.

19. The decoder of claim 12, wherein neighboring reference samples comprise at least one of an upper reference sample of the current block, an upper-left reference sample of the current

block or a left reference sample of the current block; and

the neighboring reference samples further comprise at least one of an upper-right reference sample of the current block or a bottom-left reference sample of the current block.

20. A method for predicting a video colour component, applied to an encoder and comprising:

acquiring a first colour component neighboring reference value and a first colour component reconstructed value corresponding to a current coding block, wherein the first colour component neighboring reference value represents a first colour component parameter corresponding to a neighboring reference sample of the current coding block, and the first colour component reconstructed value represents one or more reconstructed parameters of a first colour component corresponding to the current coding block;

determining a weight coefficient corresponding to the neighboring reference sample;

determining a scaling factor according to the weight coefficient and the first colour component neighboring reference value; and

obtaining a second colour component predicted value corresponding to the current coding block based on a linear model corresponding to the scaling factor.

21. The method of claim 20, wherein determining the weight coefficient corresponding to the neighboring reference sample comprises:

determining the weight coefficient according to a correlation between the current coding block and the neighboring reference sample.

22. The method of claim 20, before determining the scaling factor according to the weight coefficient and the first colour component neighboring reference value, further comprising:

acquiring a second colour component neighboring reference value corresponding to the current coding block, the second colour component neighboring reference value being a second colour component parameter corresponding to the neighboring reference sample and different from the first colour component parameter.

23. The method of claim 22, wherein determining the scaling factor according to the weight coefficient and the first colour component neighboring reference value comprises:

inputting the weight coefficient, the first colour component neighboring reference value and the second colour component neighboring reference value to a preset factor calculation model to obtain the scaling factor.

24. The method of claim 22, wherein the first colour component neighboring reference value and the first colour component reconstructed value corresponding to the current coding block comprise at least two groups of first colour component neighboring reference values and first colour component reconstructed values, the method further comprises:

determining weight coefficients for each group of first colour component neighboring reference values and first colour component reconstructed values;

inputting the weight coefficients, the first colour component neighboring reference values and the second colour component neighboring reference values to the preset factor calculation model to obtain at least two groups of scaling factors corresponding to the at least two groups of first colour component neighboring reference values and first colour component reconstructed values; and

selecting one group of scaling factors from the at least two groups of scaling factors.

25. The method of claim 22, before obtaining the second colour component predicted value corresponding to the current coding block based on the linear model corresponding to the scaling factor, further comprising:

acquiring a second colour component estimated value corresponding to the current coding block, wherein the second colour component estimated value is obtained by performing component prediction according to a second colour component corresponding to the current coding block.

26. The method of claim 23, wherein obtaining the second colour component predicted value corresponding to the current coding block based on the linear model corresponding to the scaling factor comprises:

obtaining the second colour component predicted value based on the linear model corresponding to the scaling factor and the first colour component reconstructed value.

27. The method of claim 25, wherein obtaining the second colour component predicted value corresponding to the current coding block based on the linear model corresponding to the scaling factor comprises:

obtaining the second colour component predicted value according to the scaling factor and the second colour component estimated value.

28. The method of claim 20, further comprising:

setting weight coefficients of part of reference samples corresponding to part of neighboring reference values as zero, wherein position correlations between the current coding block and the part of reference samples do not meet a preset threshold; or,

removing part of reference samples from the neighboring reference samples, wherein position correlations between the current coding block and the part of reference samples do not meet a preset threshold; or,

performing screening on the neighboring reference samples.

29. The method of claim 28, wherein performing screening on the neighboring reference samples comprises:

performing downsampling on the neighboring reference samples to determine part of reference samples.

30. The method of claim 20, wherein neighboring reference samples comprise at least one of an upper reference sample of the current coding block, an upper-left reference sample of the current coding block or a left reference sample of the current coding block; and

the neighboring reference samples further comprise at least one of an upper-right reference sample of the current coding block or a bottom-left reference sample of the current coding block

31. The method of claim 20, wherein the scaling factor is a coefficient of the linear model, and the linear model is configured for predicting a second colour component according to the first colour component.

32. An encoder, comprising an acquisition section and a determination section, wherein

the acquisition section is configured to acquire a first colour component neighboring reference value and a first colour component reconstructed value corresponding to a current coding block, wherein the first colour component neighboring reference value represents a first colour component parameter corresponding to a neighboring reference sample of the current coding block, and the first colour component reconstructed value represents one or more reconstructed parameters of a first colour component corresponding to the current coding block;

the determination section is configured to determine a weight coefficient

corresponding to the neighboring reference sample and determine a scaling factor according to the weight coefficient and the first colour component neighboring reference value; and

the acquisition section is further configured to obtain a second colour component predicted value corresponding to the current coding block based on a linear model corresponding to the scaling factor.

33. The encoder of claim 32, wherein the determination section is configured to:

determine the weight coefficient according to a correlation between the current coding block and the neighboring reference sample, wherein the correlation represents a position correlation between the current coding block and the neighboring reference sample.

34. The encoder of claim 32, wherein

the acquisition section is further configured to acquire a second colour component neighboring reference value corresponding to the current coding block before the scaling factor is determined according to the weight coefficient and the first colour component neighboring reference value, the second colour component neighboring reference value being a second colour component parameter corresponding to the neighboring reference sample and different from the first colour component parameter.

35. The encoder of claim 34, wherein the first colour component neighboring reference value and the first colour component reconstructed value corresponding to the current coding block comprise at least two groups of first colour component neighboring reference values and first colour component reconstructed values, and the determination section is configured to:

determine weight coefficients for each group of first colour component neighboring reference values and first colour component reconstructed values;

input the weight coefficients, the first colour component neighboring reference values and the second colour component neighboring reference values to the preset factor calculation model to obtain at least two groups of scaling factors corresponding to the at least two groups of first colour component neighboring reference values and first colour component reconstructed values; and

select one group of scaling factors from the at least two groups of scaling factors.

36. The encoder of claim 32, wherein the acquisition section is further configured to:

obtain the second colour component predicted value based on the linear model

corresponding to the scaling factor and the first colour component reconstructed value.

37. The encoder of claim 32, further comprising a setting section, configured to set weight coefficients of part of reference samples corresponding to part of neighboring reference values as zero, wherein position correlations between the current coding block and the part of reference samples do not meet a preset threshold;

wherein the determination section is configured to:

remove part of reference samples from the neighboring reference samples, wherein position correlations between the current coding block and the part of reference samples do not meet a preset threshold; or,

perform screening on the neighboring reference samples.

38. The encoder of claim 32, wherein neighboring reference samples comprise at least one of an upper reference sample of the current coding block, an upper-left reference sample of the current coding block or a left reference sample of the current coding block; and

the neighboring reference samples further comprise at least one of an upper-right reference sample of the current coding block or a bottom-left reference sample of the current coding block.