CLAIMS

1. A method of coding video data, the method comprising:

coding, in an interleaving manner, coefficient information on a coefficient-by-coefficient basis for coefficients in a residual block of a current block of the video data in a first pass through the coefficients in the residual block, wherein the coefficients in the residual block comprise a first coefficient indicative of a difference between a first sample of the current block and a first sample of a prediction block and a second coefficient indicative of a difference between a second sample of the current block and a second sample of the prediction block, wherein the coefficient information includes one or more of a significance flag indicating whether a value of the coefficient is not zero, a parity flag indicating whether the value of the coefficient is odd or even, a sign flag indicating whether the value of the coefficient is positive or negative, and one or more greater than flags indicating whether an absolute value of the coefficient is greater than respective threshold values,

wherein coding, in the interleaving manner, the coefficient information comprises coding, in the first pass, two or more of a first significance flag, a first parity flag, a first sign flag, and a first set of one or more greater than flags for the first coefficient, and after the coding of the two or more of the first significance flag, the first parity flag, the first sign flag, and the first set of one or more greater than flags for the first coefficient, coding, in the first pass, two or more of a second significance flag, a second parity flag, a second sign flag, and a second set of one or more greater than flags for the second coefficient,

wherein coding, in the interleaving manner, the coefficient information further comprises:

context-based coding, in the interleaving manner, the coefficient information on the coefficient-by-coefficient basis until a coded bin count limit is reached; and

bypass coding, in the interleaving manner, the coefficient information on the coefficient-by-coefficient basis after the coded bin count limit is reached; and

after the first pass, coding remainder information for coefficients in the residual block of the current block in a second pass through the coefficients in the residual block, wherein the remainder information comprises remaining absolute values of the coefficients in the residual block,

wherein coding the remainder information comprises:

coding information indicative of a remaining absolute value of a particular coefficient, wherein the coded bin count limit is reached during the coding of the particular coefficient; and

coding respective values of coefficients following the particular coefficient.

2. The method of claim 1, wherein coding the respective values of the coefficients comprises coding information indicative of respective differences between absolute values of respective values of the coefficients following the particular coefficient and 1.

3. The method of claim 1, wherein coding the remainder information comprises bypass coding the remainder information.

4. The method of claim 1, further comprising:

determining that the current block is coded in transform-skip mode,

wherein coding, in the interleaving manner, and coding the remainder information comprises coding, in the interleaving manner, and coding the remainder information based on the current block being coded in the transform-skip mode.

5. The method of claim 1,

wherein coding, in the interleaving manner, comprises parsing, in the interleaving manner, the coefficient information on the coefficient-by-coefficient basis for coefficients in the residual block of the current block in the first pass, and

wherein coding the remainder information comprises parsing the remainder information for coefficients in the residual block of the current block in the second pass.

6. The method of claim 1,

wherein coding, in the interleaving manner, comprises signaling, in the interleaving manner, the coefficient information on the coefficient-by-coefficient basis for coefficients in the residual block of the current block in the first pass, and

wherein coding the remainder information comprises signaling the remainder information for coefficients in the residual block of the current block in the second pass.

7. A device for coding video data, the device comprising:

a memory configured to store video data; and

processing circuitry configured to:

code, in an interleaving manner, coefficient information on a coefficient-by-coefficient basis for coefficients in a residual block of a current block of the video data in a first pass through the coefficients in the residual block, wherein the coefficients in the residual block comprise a first coefficient indicative of a difference between a first sample of the current block and a first sample of a prediction block and a second coefficient indicative of a difference between a second sample of the current block and a second sample of the prediction block, wherein the coefficient information includes one or more of a significance flag indicating whether a value of the coefficient is not zero, a parity flag indicating whether the value of the coefficient is odd or even, a sign flag indicating whether the value of the coefficient is positive or negative, and one or more greater than flags indicating whether an absolute value of the coefficient is greater than respective threshold values,

wherein to code, in the interleaving manner, the coefficient information, the processing circuitry is configured to code, in the first pass, two or more of a first significance flag, a first parity flag, a first sign flag, and a first set of one or more greater than flags for the first coefficient, and after the coding of the two or more of the first significance flag, the first parity flag, the first sign flag, and the first set of one or more greater than flags for the first coefficient, code, in the first pass, two or more of a second significance flag, a second parity flag, a second sign flag, and a second set of one or more greater than flags for the second coefficient,

wherein to code, in the interleaving manner, the coefficient information, the processing circuitry is further configured to:

context-based code, in the interleaving manner, coefficient information on the coefficient-by-coefficient basis until a coded bin count limit is reached; and

bypass code, in the interleaving manner, coefficient information on the coefficient-by-coefficient basis after the coded bin count limit is reached; and

after the first pass, code remainder information for coefficients in the residual block of the current block in a second pass through the coefficients in the residual block, wherein the remainder information comprises remaining absolute values of the coefficients in the residual block,

wherein to code the remainder information, the processing circuitry is configured to:

code information indicative of a remaining absolute value of a particular coefficient, wherein the coded bin count limit is reached during the coding of the particular coefficient; and

code respective values of coefficients following the particular coefficient.

8. The device of claim 7, wherein to code the respective values of the coefficients, the processing circuitry is configured to code information indicative of respective differences between absolute values of respective values of the coefficients following the particular coefficient and 1.

9. The device of claim 7, wherein to code the remainder information, the processing circuitry is configured to bypass code the remainder information.

10. The device of claim 7, wherein the processing circuitry is configured to:

determine that the current block is coded in transform-skip mode,

wherein to code, in the interleaving manner, and code the remainder information, the processing circuitry is configured to code, in the interleaving manner, and code the remainder information based on the current block being coded in the transform-skip mode.

11. The device of claim 7,

wherein the processing circuitry comprises a video decoder,

wherein to code, in the interleaving manner, the processing circuitry is configured to parse, in the interleaving manner, the coefficient information on the coefficient-by-coefficient basis for coefficients in the residual block of the current block in the first pass, and

wherein to code the remainder information, the processing circuitry is configured to parse the remainder information for coefficients in the residual block of the current block in the second pass.

12. The device of claim 7,

wherein the processing circuitry comprises a video encoder,

wherein to code, in the interleaving manner, the processing circuitry is configured to signal, in the interleaving manner, the coefficient information on the coefficient-by-coefficient basis for coefficients in the residual block of the current block in the first pass, and

wherein to code the remainder information, the processing circuitry is configured to signal the remainder information for coefficients in the residual block of the current block in the second pass.

13. The device of claim 7, wherein the device comprises one or more of a camera, a computer, a mobile device, a broadcast receiver device, or a set-top box.

14. A non-transitory computer-readable storage medium having stored thereon instructions that, when executed, cause one or more processors to:

code, in an interleaving manner, coefficient information on a coefficient-by-coefficient basis for coefficients in a residual block of a current block of the video data in a first pass through the coefficients in the residual block, wherein the coefficients in the residual block comprise a first coefficient indicative of a difference between a first sample of the current block and a first sample of a prediction block and a second coefficient indicative of a difference between a second sample of the current block and a second sample of the prediction block, wherein the coefficient information includes one or more of a significance flag indicating whether a value of the coefficient is not zero, a parity flag indicating whether the value of the coefficient is odd or even, a sign flag indicating whether the value of the coefficient is positive or

negative, and one or more greater than flags indicating whether an absolute value of the coefficient is greater than respective threshold values,

wherein the instructions that cause the one or more processors to code, in the interleaving manner, the coefficient information comprise instructions that cause the one or more processors to code, in the first pass, two or more of a first significance flag, a first parity flag, a first sign flag, and a first set of one or more greater than flags for the first coefficient, and after the coding of the two or more of the first significance flag, the first parity flag, the first sign flag, and the first set of one or more greater than flags for the first coefficient, code, in the first pass, two or more of a second significance flag, a second parity flag, a second sign flag, and a second set of one or more greater than flags for the second coefficient,

wherein the instructions that cause the one or more processors to code, in the interleaving manner, the coefficient information further comprise instructions that cause the one or more processors to:

context-based code, in the interleaving manner, coefficient information on the coefficient-by-coefficient basis until a coded bin count limit is reached; and

bypass code, in the interleaving manner, coefficient information on the coefficient-by-coefficient basis after the coded bin count limit is reached; and

after the first pass, code remainder information for coefficients in the residual block of the current block in a second pass through the coefficients in the residual block, wherein the remainder information comprises remaining absolute values of the coefficients in the residual block,

wherein the instructions that cause the one or more processors to code the remainder information comprise instructions that cause the one or more processors to:

code information indicative of a remaining absolute value of a particular coefficient, wherein the coded bin count limit is reached during the coding of the particular coefficient; and

code respective values of coefficients following the particular coefficient.

15. The non-transitory computer-readable storage medium of claim 14, wherein the instructions that cause the one or more processors to code the respective values of the coefficients comprise instructions that cause the one or more processors to code information indicative of respective differences between absolute values of respective values of the coefficients following the particular coefficient and 1.

16. The non-transitory computer-readable storage medium of claim 14, wherein the instructions that cause the one or more processors to code the remainder information comprise instructions that cause the one or more processors to bypass code the remainder information.

17. The non-transitory computer-readable storage medium of claim 14, further comprising instructions that cause the one or more processors to:

determine that the current block is coded in transform-skip mode,

wherein the instructions that cause the one or more processors to code, in the interleaving manner, and code the remainder information comprise instructions that cause the one or more processors to code, in the interleaving manner, and code the remainder information based on the current block being coded in the transform-skip mode.

18. The non-transitory computer-readable storage medium of claim 14,

wherein the instructions that cause the one or more processors to code, in the interleaving manner, comprise instructions that cause the one or more processors to parse, in the interleaving manner, the coefficient information on the coefficient-by-coefficient basis for coefficients in the residual block of the current block in the first pass, and

wherein the instructions that cause the one or more processors to code the remainder information comprise instructions that cause the one or more processors to parse the remainder information for coefficients in the residual block of the current block in the second pass.

19. The non-transitory computer-readable storage medium of claim 14,

wherein the instructions that cause the one or more processors to code, in the interleaving manner, comprise instructions that cause the one or more processors to signal, in the interleaving manner, the coefficient information on the coefficient-by-coefficient basis for coefficients in the residual block of the current block in the first pass, and

wherein the instructions that cause the one or more processors to code the remainder information comprise instructions that cause the one or more processors to signal the remainder information for coefficients in the residual block of the current block in the second pass.

20. A device for coding video data, the device comprising:

means for coding, in an interleaving manner, coefficient information on a coefficient-by-coefficient basis for coefficients in a residual block of a current block of the video data in a first pass through the coefficients in the residual block, wherein the coefficients in the residual block comprise a first coefficient indicative of a difference between a first sample of the current block and a first sample of a prediction block and a second coefficient indicative of a difference between a second sample of the current block and a second sample of the prediction block, wherein the coefficient information includes one or more of a significance flag indicating whether a value of the coefficient is not zero, a parity flag indicating whether the value of the coefficient is odd or even, a sign flag indicating whether the value of the coefficient is positive or negative, and one or more greater than flags indicating whether an absolute value of the coefficient is greater than respective threshold values,

wherein the means for coding, in the interleaving manner, the coefficient information comprises means for coding, in the first pass, two or more of a first significance flag, a first parity flag, a first sign flag, and a first set of one or more greater than flags for the first coefficient, and coding, in the first pass, one or more of a second significance flag, a second parity flag, a second sign flag, and a second set of one or more greater than flags for the second coefficient after the coding of the two or more of the first significance flag, the first parity flag, the first sign flag, and the first set of one or more greater than flags for the first coefficient,

wherein the means for coding, in the interleaving manner, the coefficient information comprises:

means for context-based coding, in the interleaving manner, coefficient information on the coefficient-by-coefficient basis until a coded bin count limit is reached; and

means for bypass coding, in the interleaving manner, coefficient information on the coefficient-by-coefficient basis after the coded bin count limit is reached; and

means for coding remainder information for coefficients in the residual block of the current block in a second pass, after the first pass, through the coefficients in the residual block, wherein the remainder information comprises remaining absolute values of the coefficients in the residual block,

wherein the means for coding the remainder information comprises:

means for coding information indicative of a remaining absolute value of a particular coefficient, wherein the coded bin count limit is reached during the coding of the particular coefficient; and

means for coding respective values of coefficients following the particular coefficient.

21. The device of claim 20,

wherein the means for coding, in the interleaving manner, comprises means for parsing, in the interleaving manner, the coefficient information on the coefficient-by-coefficient basis for coefficients in the residual block of the current block in the first pass, and

wherein the means for coding the remainder information comprises means for parsing the remainder information for coefficients in the residual block of the current block in the second pass.

22. The device of claim 20,

wherein the means for coding, in the interleaving manner, comprises means for signaling, in the interleaving manner, the coefficient information on the coefficient-by-coefficient basis for coefficients in the residual block of the current block in the first pass, and

wherein the means for coding the remainder information comprises means for signaling the remainder information for coefficients in the residual block of the current block in the second pass.