CLAIMS

What is claimed is:

1. A method for video decoding, comprising:

receiving, by a decoder, a Sequence Parameter Set (SPS) rice extension flag that indicates whether an extension of rice parameter derivation for binarization of abs_remainder and dec_abs_level is used; and

receiving, by the decoder, a general constraint information (GCI) rice extension flag, in GCI syntax to provide general control of the SPS rice extension flag,

wherein abs_remainder is coded with Golomb-rice code and bypass-coded bins in a second pass when remaining number of context-coded bins is greater than or equal to 4 while coding in a first pass; and

wherein dec_abs_level is directly coded in the second pass using Golomb-Rice code and bypass-coded bins when remaining number of context-coded bins is less than 4 while coding in the first pass.

2. The method for video decoding of claim 1, further comprising:

in response to determining that a value of the SPS rice extension flag equals to 1, determining, by the decoder, that the extension of rice parameter derivation for the binarization is used; and

in response to determining that the value of the SPS rice extension flag equals to 0, determining, by the decoder, that the extension of rice parameter derivation for the binarization is not used.

3. The method for video decoding of claim 1, further comprising:

in response to determining that a value of the GCI rice extension flag equals to 1, determining that a value of the SPS rice extension flag equals to 0.

4. The method for video decoding of claim 1, wherein a color format of a current block is 4:2:0 or 4:2:2 or 4:4:4.

5. The method for video decoding of claim 1, wherein a bit depth of a current block is 10, 11, 12, 13, 14, 15 or 16.

6. A method for video encoding, comprising:

signaling, by an encoder, a Sequence Parameter Set (SPS) rice extension flag that indicates whether an extension of rice parameter derivation for binarization of abs_remainder and dec_abs_level is used; and

signaling, by the encoder, a general constraint information (GCI) rice extension flag in GCI syntax, to provide general control of the SPS rice extension flag,

wherein abs_remainder is coded with Golomb-rice code and bypass-coded bins in a second pass when remaining number of context-coded bins is greater than or equal to 4 while coding in a first pass; and

wherein dec_abs_level is directly coded in the second pass using Golomb-Rice code and bypass-coded bins when remaining number of context-coded bins is less than 4 while coding in the first pass.

7. The method for video encoding of claim 6, wherein

a value of the SPS rice extension flag equaling to 1 specifies that the extension of rice parameter derivation for the binarization is used; and

the value of the SPS rice extension flag equaling to 0 specifies that the extension of rice parameter derivation for the binarization is not used.

8. The method for video encoding of claim 6, wherein

a value of the GCI rice extension flag equaling to 1 specifies that a value of the SPS rice extension flag equals to 0.

9. The method for video encoding of claim 6, wherein a color format of a current block is 4:2:0 or 4:2:2 or 4:4:4.

10. The method for video encoding of claim 6, wherein a bit depth of a current block is 10, 11, 12, 13, 14, 15 or 16.

11. An apparatus for video decoding, comprising:

one or more processors; and

a memory configured to store instructions executable by the one or more processors; wherein the one or more processors, upon execution of the instructions, are configured to perform the method in any of claims 1-5.

12. An apparatus for video encoding, comprising:

one or more processors; and

a memory configured to store instructions executable by the one or more processors; wherein the one or more processors, upon execution of the instructions, are configured to perform the method in any of claims 6-10.

13. A non-transitory computer-readable storage medium storing a bitstream to be decoded by the method in any of claims 1-3 or a bitstream generated by the method in any of claims 6-8.

14. The non-transitory computer-readable storage medium of claim 13, wherein a color format of a current block is 4:2:0 or 4:2:2 or 4:4:4.

15. The non-transitory computer-readable storage medium of claim 13, wherein a bit depth of a current block is 10, 11, 12, 13, 14, 15 or 16.

16. A method of storing a bitstream, comprising:

performing the method in any of claims 6-8 to generate the bitstream; and

storing the bitstream.

17. The method of claim 16, wherein a color format of a current block is 4:2:0 or 4:2:2 or 4:4:4.

18. The method of claim 16, wherein a bit depth of a current block is 10, 11, 12, 13, 14, 15 or 16.