CLAIMS:

1. A method of video decoding performed in a video decoder, comprising:

receiving a first syntax element from a bitstream of a coded video, the first syntax element indicating whether a sequence of pictures are monochrome or include three color components that are coded separately; and

inferring a value of a second syntax element to disable a first coding tool that uses multiple color components of a picture as input or depends on a chroma component of a picture in response to the first syntax element indicating that the sequence of pictures are monochrome or include three color components that are coded separately, the first syntax element and the second syntax element being different syntax elements, wherein the second syntax element indicates whether joint coding of chroma residuals is enabled.

2. The method of claim 1, wherein inferring the value of the second syntax element to disable the first coding tool that uses the multiple color components of the picture as input includes:

inferring the value of the second syntax element indicating that the joint coding of chroma residuals disabled.

3. The method of claim 1, further comprising:

inferring a value of a third syntax element to disable a second coding tool that uses multiple color components of the picture as input includes, wherein the third syntax element indicates whether active color transform (ACT) is enabled, and the value of the third syntax element is inferred to be equal to zero.

4. The method of claim 1, further comprising:

inferring a value of a fourth syntax element to disable a third coding tool that depends on a chroma component of the picture as input , wherein the fourth syntax element indicates whether block-based delta pulse code modulation (BDPCM) for chroma component is enabled, and the value of the fourth syntax element is inferred to be equal to zero.

5. The method of claim 1, wherein inferring the value of the second syntax element to disable the first coding tool that uses multiple color components of the picture as input or depends on the chroma component of the picture includes:

determining a value of a variable to be zero when the first syntax element indicates that the sequence of pictures are monochrome or include three color components that are coded separately, the variable indicating a chroma array type of the sequence of pictures; and

in response to determining the value of the variable to be zero, inferring the value of one of the following syntax elements to be equal to zero:

the second syntax element indicating whether the joint coding of chroma residuals is enabled,

a third syntax element indicating whether ACT is enabled, or

a fourth syntax element indicating whether BDPCM for chroma component is enabled.

6. The method of claim 1, further comprising:

receiving the second syntax element indicating whether the joint coding of chroma residuals is enabled when the sequence of pictures are determined as not monochrome and include three color components that are not coded separately.

7. The method of claim 3, further comprising:

receiving the third syntax element indicating whether the ACT is enabled when the sequence of pictures are determined as not monochrome and include three color components that are not coded separately.

8. The method of claim 4, further comprising:

receiving the fourth syntax element indicating whether the BDPCM for chroma component is enabled when the sequence of pictures are determined as not monochrome and include three color components that are not coded separately.

9. The method of claim 1, further comprising:

determining a value of a variable indicating a chroma array type of the sequence of pictures when the sequence of pictures are determined as not monochrome and include three color components that are not coded separately; and

receiving one of the following syntax elements when the value of the variable is determined to be non-zero:

the second syntax element indicating whether the joint coding of chroma residuals is enabled,

a third syntax element indicating whether ACT is enabled, or

a fourth syntax element indicating whether BDPCM for chroma component is enabled.

10. The method of claim 1, further comprising:

determining a value of a variable indicating a chroma array type of the sequence of pictures when the sequence of pictures are determined as not monochrome and include three color components that are not coded separately; and

receiving a syntax element indicating whether BDPCM for chroma component is enabled when the value of the variable is determined to be non-zero, and when a lossless mode is enabled for the sequence of pictures.

11. An apparatus of video decoding, comprising circuitry configured to:

receive a first syntax element from a bitstream of a coded video, the first syntax element indicating whether a sequence of pictures are monochrome or include three color components that are coded separately; and

infer a value of a second syntax element to disable a first coding tool that uses multiple color components of a picture as input or depends on a chroma component of a picture in response to the first syntax element indicating that the sequence of pictures are monochrome or include three color components that are coded separately, the first syntax element and the second syntax element being different syntax elements, wherein the second syntax element indicates whether joint coding of chroma residuals is enabled.

12. The apparatus of claim 11, wherein the circuitry is further configured to:

infer the value of the second syntax element indicating that the joint coding of chroma residuals is disabled.

13. The apparatus of claim 11, wherein the circuitry is further configured to:

infer a value of a third syntax element to be equal to zero to disable a second coding tool that uses multiple color components of the picture as input, the third syntax element indicating whether active color transform (ACT) is enabled.

14. The apparatus of claim 11, wherein the circuitry is further configured to:

infer a value of the a fourth syntax element to be equal to zero to disable a third coding tool that depends on a chroma component of the picture as input, the fourth syntax element indicating whether block-based delta pulse code modulation (BDPCM) for chroma component is enabled.

15. A non-transitory computer-readable medium storing instructions that, when executed by a processor, cause the processor to perform a method of video decoding, the method comprising:

receiving a first syntax element from a bitstream of a coded video, the first syntax element indicating whether a sequence of pictures are monochrome or include three color components that are coded separately; and

inferring a value of a second syntax element to disable a first coding tool that uses multiple color components of a picture as input or depends on a chroma component of a picture in response to the first syntax element indicating that the sequence of pictures are monochrome or include three color components that are coded separately, the first syntax element and the second syntax element being different syntax elements, wherein the second syntax element indicates whether joint coding of chroma residuals is enabled.

16. The non-transitory computer-readable medium of claim 15, wherein inferring the value of the second syntax element to disable the first coding tool that uses the multiple color components of the picture as input includes:

inferring the value of the second syntax element indicating that the joint coding of chroma residuals is disabled.

17. The non-transitory computer-readable medium of claim 15, further comprising:

inferring a value of a third syntax element to disable a second coding tool that uses multiple color components of the picture as input, wherein the third syntax element indicates whether active color transform (ACT) is enabled, and the value of the third syntax element is inferred to be equal to zero.