CLAIMS

What is claimed is:

1. A picture prediction method, comprising:

determining whether a merge mode is used for a current picture block;

when the merge mode is used for the current picture block, determining whether a regular merge mode is available;

when the regular merge mode is unavailable, and a high-layer syntax element, sps_triangle_enabled_flag, corresponding to a triangle partition mode (TPM) indicates that the TPM is forbidden to be used, determining a combined intra and inter prediction (CIIP) mode as a target merge mode applicable to the current picture block; and

predicting the current picture block based on the target merge mode.

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

when the regular merge mode is unavailable, and the high-layer syntax element, sps_triangle_enabled_flag, corresponding to the TPM indicates that the TPM is allowed to be used, determining the target merge mode based on a high-layer syntax element, sps_ciip_enabled_flag, corresponding to the CIIP mode and/or available status information of the CIIP mode, wherein the available status information of the CIIP mode is used to indicate whether the CIIP mode is used when the current picture block is predicted, wherein the available status information of the CIIP mode is a value of a ciip_flag.

3. The method according to claim 2, wherein the determining the target merge mode based on a high-layer syntax element corresponding to the CIIP mode and/or available status information of the CIIP mode comprises:

when the high-layer syntax element corresponding to the CIIP mode and/or the available status information of the CIIP mode indicate/indicates that the CIIP mode is forbidden to be used, determining the TPM as the target merge mode.

4. The method according to claim 2 or 3, wherein before the determining the target merge mode based on a high-layer syntax element corresponding to the CIIP mode and/or available status information of the CIIP mode, the method further comprises:

determining that the current picture block meets at least one of the following conditions:

a size of the current picture block meets a preset condition;

a skip mode is not used to predict the current picture block.

5. The method according to claim 4, wherein that a size of the current picture block meets a preset condition comprises:

the current picture block meets the following three conditions:

(cdWidth * cbHeight) ≥ 64;

cbWidth < 128; and

cbHeight < 128, wherein

cdWidth is a width of the current picture block, and cbHeight is a height of the current picture block.

6. The method according to any one of claims 1 to 5, wherein before the determining the target merge mode based on a high-layer syntax element corresponding to the CIIP mode and/or available status information of the CIIP mode, the method further comprises:

determining that a type of a slice or slice group in which the current picture block is located is B; and

determining that a maximum quantity of TPM mode candidates supported by the slice or slice group in which the current picture block is located is greater than or equal to 2.

7. The method according to claim 1, wherein the method further comprises:

when the regular merge mode is unavailable, and a high-layer syntax element corresponding to the TPM mode indicates that the TPM mode is allowed to be used, but the current picture block does not meet at least one of a condition A and a condition B, determining the CIIP mode as the target merge mode, wherein the condition A is that a type of a slice in which the current picture block is located is B, and the condition B is that a maximum quantity of TPM mode candidates supported by the slice or slice group in which the current picture block is located is greater than or equal to 2.

8. The method according to any one of claims 1 to 7, wherein the high-layer syntax element is a syntax element at at least one of a sequence level, a picture level, a slice level, and a slice group level.

9. The method according to claim 1, wherein the method further comprises:

when the regular merge mode is unavailable, determining the target merge mode from a level-2 merge mode, wherein the level-2 merge mode comprises a TPM mode and a CIIP mode; and

when the CIIP mode is allowed to be used, and any one of the following conditions is not met, determining the CIIP mode as the target merge mode:

condition D: the TPM mode is allowed to be used;

condition E: a skip mode is not used to predict the current picture block;

condition F: (cbWidth * cbHeight) ≥ 64;

condition G: cbWidth < 128; and

condition H: cbHeight < 128, wherein

cbWidth is of the current picture block is a width of the current picture block, and cbHeight is a height of the current picture block.

10. The method according to any one of claims 1 to 9, wherein the prediction method is applied to an encoder side, to encode the current picture block.

11. The method according to any one of claims 1 to 9, wherein the prediction method is applied to a decoder side, to decode the current picture block.

12. A picture prediction apparatus, comprising:

a memory, configured to store a program; and

a processor, configured to execute the program stored in the memory, wherein when the program stored in the memory is executed by the processor, the processor performs the method according to any one of claims 1 to 11.

13. A computer-readable storage medium, wherein the computer-readable storage medium stores a computer program that can be executed by a processor, and when the computer program is executed by the processor, the processor performs the method according to any one of claims 1 to 11.

14. A storage medium, wherein the storage medium stores a bitstream obtained by using the method according to any one of claims 1 to 11.

15. A program comprising program code for performing the method according to any one of claims 1 to 11.