WHAT IS CLAIMED IS:

1. A method for monitoring a physical downlink control channel (PDCCH), the method comprising:

~~in response to a terminal needing to monitor a plurality of PDCCHs at an overlapping occasion,~~ determining at least one of one or more specified control resource sets (CORESETs) ~~and/~~or one or more pieces of specified beam information, wherein a terminal needs to monitor a plurality of PDCCHs at an overlapping occasion; and

monitoring a PDCCH of the one or more specified CORESETs and a PDCCH of another CORESET with same beam information as beam information of the one or more specified CORESETs at the overlapping occasion, or monitoring a PDCCH of a CORESET with beam information being the same as the specified beam information at the overlapping occasion.

2. The method according to claim 1, wherein at least one of one or more specified CORESETs ~~and/~~or one or more pieces of specified beam information are determined based on at least one piece of the following information:

serving cell indexes of CORESETs corresponding to a plurality of PDCCH candidates that need to be monitored at the overlapping occasion;

information on whether CORESETs corresponding to a plurality of PDCCH candidates that need to be monitored at the overlapping occasion comprise a common search space (CSS) set;

an index of the CSS set comprised in CORESETs corresponding to a plurality of PDCCH candidates that need to be monitored at the overlapping occasion;

an index of a UE-specific search space (USS) set of CORESETs corresponding to a plurality of PDCCH candidates that need to be monitored at the overlapping occasion; or

a number of transmission configuration indication (TCI) states configured by CORESETs corresponding to a plurality of PDCCH candidates that need to be monitored at the overlapping occasion.

3. The method according to claim 2, wherein determining at least one of one or more specified CORESETs ~~and/~~or one or more pieces of specified beam information comprises at least one of:

determining, based on at least one of the serving cell indexes, whether the CSS set is comprised, the index of the CSS set, the index of the USS set, or the number of TCI states, one or more specified CORESETs among the CORESETs corresponding to the plurality of PDCCH candidates that need to be monitored at the overlapping occasion, ~~and/~~or

determining ~~at least one piece of~~ one or more pieces of beam information of the one or more specified CORESETs as the one or more pieces of specified beam information.

4. The method according to claim 2 or 3, wherein determining at least one of one or more specified CORESETs ~~and/~~or one or more pieces of specified beam information comprises:

selecting a CORESET that comprises a CSS set among the CORESETs corresponding to the plurality of PDCCH candidates that need to be monitored at the overlapping occasion;

selecting a serving cell with a smallest serving cell index among serving cells of the CORESET that comprises the CSS set; and

determining a CSS set with a smallest CSS set index in the serving cell with the smallest serving cell index, and perform at least one of: determining a CORESET corresponding to the CSS set with the smallest CSS set index as the specified CORESET, ~~and/~~or determining ~~at least one piece of~~ beam information of a CORESET corresponding to the CSS set with the smallest CSS set index as the specified beam information.

5. The method according to claim 2 or 3, wherein determining at least one of one or more specified CORESETs ~~and/~~or one or more pieces of specified beam information comprises:

selecting a CORESET that comprises a USS set among the CORESETs corresponding to the plurality of PDCCH candidates that need to be monitored at the overlapping occasion;

selecting a serving cell with a smallest serving cell index among serving cells of the CORESET that comprises the USS set; and

determining a USS set with a smallest USS set index in the serving cell with the smallest serving cell index, and perform at least one of: determining a CORESET corresponding to the USS set with the smallest USS set index as the specified CORESET, ~~and/~~or determining beam information of a CORESET corresponding to the USS set with the smallest USS set index as the specified beam information.

6. The method according to any one of claims 1 to 5, wherein each specified CORESET in the one or more specified CORESETs is configured with one or more transmission configuration indication (TCI) states.

7. The method according to claim 6, wherein ~~in response to the terminal needing to monitor the plurality of PDCCHs at the overlapping occasion,~~ determining at least one of one or more specified CORESETs ~~and/~~or one or more pieces of specified beam information comprises:

determining one specified CORESET, and the one specified CORESET is configured with one TCI state.

8. The method according to claim 7, wherein the one piece of specified beam information is determined based on the one TCI state.

9. The method according to claim 6, wherein ~~in response to the terminal needing to monitor the plurality of PDCCHs at the overlapping occasion,~~ determining at least one of one or more specified CORESETs ~~and/or~~or one or more pieces of specified beam information comprises:

determining a plurality of specified CORESETs, and each specified CORESET among the plurality of specified CORESETs is configured with one or more transmission configuration indication (TCI) states.

10. The method according to claim 9, wherein the one or more pieces of specified beam information are determined based on ~~at least~~ the one or more TCI states of each specified CORESET among the plurality of specified CORESETs.

11. The method according to claim 6, wherein ~~in response to the terminal needing to monitor the plurality of PDCCHs at the overlapping occasion,~~ determining at least one of one or more specified CORESETs ~~and/or~~or one or more pieces of specified beam information comprises:

determining one specified CORESET, and the one specified CORESET is configured with a plurality of transmission configuration indication (TCI) states.

12. The method according to claim ~~9~~11, wherein the one or more pieces of specified beam information are determined based on the plurality of TCI states of the one specified CORESET.

13. The method according to claim 1, wherein at least one of the following conditions is satisfied between ~~the~~ a plurality of specified CORESETs:

the plurality of specified CORESETs respectively correspond to different transmission and reception points;

the plurality of specified CORESETs correspond to different CORESET pool indexes;

the plurality of specified CORESETs correspond to different physical cell identities; or

beams corresponding to the plurality of specified CORESETs are beams that the terminal may receive simultaneously, and/or beams received by different panels of the terminal.

14. The method according to claim 1, wherein beams corresponding to the pieces of specified beam information are at least one of: beams that the terminal may receive simultaneously, or beams received by different panels of the terminal.

~~15. An apparatus for monitoring a physical downlink control channel (PDCCH), comprising:~~

~~a processing unit, configured to determine one or more specified control resource sets (CORESETs) and/or one or more pieces of specified beam information, in response to a terminal needing to monitor a plurality of PDCCHs at an overlapping occasion; and~~

~~a monitoring unit, configured to monitor a PDCCH of the specified CORESET and a PDCCH of another CORESET with same beam information as the specified CORESET at the overlapping occasion, or monitor a PDCCH of a CORESET with beam information being the same as the specified beam information at the overlapping occasion.~~

~~16~~15. A device for monitoring a physical downlink control channel, comprising:

a processor; and

a memory for storing instructions executable by the processor;

wherein the processor is configured to execute the method for monitoring a physical downlink control channel according to any one of claims 1 to 14.

~~17~~16. A non-transitory computer-readable storage medium storing instructions, wherein when the instructions are executed by a processor of a terminal, the terminal is caused to execute the method for monitoring a physical downlink control channel according to any one of claims 1 to 14.