INFORMATION DETERMINATION METHOD AND APPARATUS, FIRST COMMUNICATION NODE AND STORAGE MEDIUM

The present application claims priority to Chinese Patent Application No. 201910945697.2, filed with the CNIPA on Sep. 30, 2019, the disclosure of which is incorporated herein by reference in its entirety

TECHNICAL FIELD

The present application relates to the field of communications, and for example to an information determination method and device, a first communication node, and a storage medium.

BACKGROUND

In the beam management, for determination of information of an uplink signal or an uplink channel, such as a beam indication, in general, a second communication node, such as a base station, configures or indicates an explicit reference signal for the uplink signal or the uplink channel in a preset manner (such as, radio resource control (RRC) signaling, MAC-CE signaling, and downlink control information (DCI)), where the reference signal may be a downlink signal, such as a synchronization signal block (SSB), a channel state information reference signal (CSI-RS), and may also be the uplink signal (such as SRS). If the reference signal is the downlink signal, then a first communication node, such as a user equipment (UE), may determine a transmission beam of the uplink signal or a transmission beam of the uplink channel according to a receiving beam of the downlink signal; and if the reference signal is the uplink signal, then the UE may determine a transmission beam of the uplink signal or a transmission beam of the uplink channel according to a transmission beam of the uplink signal.

However, in some cases, the base station cannot perform an effective beam indication of the uplink signal or an effective beam indication of the uplink channel through the above manners.

SUMMARY

Embodiments of the present application provide an information determination method and device, a first communication node, and a storage medium.

A first aspect of the present application provides a communication method. The communication method is applied to a first communication node, and the

communication method includes: in response to a condition being satisfied, a reference signal is determined, wherein the reference signal comprises a quasi co-location reference signal of a first quasi co-location type associated with an activated transmission configuration indication (TCI) state; and information of an uplink signal is determined according to the reference signal; and communicating with a second communication node based on the information, wherein the condition comprises: the first communication node is not provided with spatial relationship information of the uplink signal, and a serving cell where the uplink signal is located does not comprise a control resource set (CORESET).

A second aspect of the present application provides a communication node comprising: a processor and a memory, wherein, when the processor reads instructions from the memory, the processor is configured to perform: in response to a condition being satisfied, determining a reference signal, wherein the reference signal comprises a quasi co-location reference signal of a first quasi co-location type associated with an activated transmission configuration indication (TCI) state; determining information of an uplink signal according to the reference signal; and communicating with a second communication node based on the information, wherein the condition comprises: the communication node is not provided with spatial relationship information of the uplink signal, and a serving cell where the uplink signal is located does not comprise a control resource set (CORESET).

A third aspect of the present application provides a method for communication between a first communication node and a second communication node, the method applied to the second communication node, and the method comprising: communicating with the first communication node based on information of an uplink signal, wherein: the information of the uplink signal is determined according to a reference signal; the reference signal, comprising a quasi co-location reference signal of a first quasi co-location type associated with an activated transmission configuration indication (TCI) state, is determined in response to a condition being satisfied; and the condition comprises: the first communication node is not provided with spatial relationship information of the uplink signal, and a serving cell where the uplink signal is located does not comprise a control resource set (CORESET).

A fourth aspect of the present application provides a communication node comprising: a processor and a memory, wherein, when the processor reads instructions from the memory, the processor is configured to perform: communicating with an other communication node based on information of an uplink signal, wherein: the information of the uplink signal is determined according to a

reference signal; the reference signal, comprising a quasi co-location reference signal of a first quasi co-location type associated with an activated transmission configuration indication (TCI) state, is determined in response to a condition being satisfied; and the condition comprises: the other communication node is not provided with spatial relationship information of the uplink signal, and a serving cell where the uplink signal is located does not comprise a control resource set (CORESET).

An embodiment of the present application further provides an information determination device. The information determination device is configured at a first communication node, and the information determination device includes a reference signal determination module and an information determination module. The reference signal determination module is configured to determine a reference signal in a case where a preset condition is satisfied. The information determination module is configured to determine information of an uplink signal or information of an uplink channel according to the reference signal.

An embodiment of the present application further provides a first communications node. The first communications node includes one or more processors and a storage device configured to store one or more programs. The one or more programs, when executed by the one or more processors, cause the one or more processors to implement any of the information determination methods in the embodiments of the present application.

An embodiment of the present application further provides a storage medium. The storage medium stores a computer program. The computer program, when executed by a processor, implements any of the information determination methods in the embodiments of the present application.

BRIEF DESCRIPTION OF DRAWINGS

FIG. 1 is a schematic flowchart of an information determination method provided in an embodiment of the present application;

FIG. 2 is a schematic structural diagram of an information determination device provided in an embodiment of the present application; and

FIG. 3 is a schematic structural diagram of a first communication node provided in an embodiment of the present application.

DETAILED DESCRIPTION

Embodiments of the present application will be described below with reference to the accompanying drawings.

What is claimed is:

1. A communication method, applied to a first communication node, comprising:

in response to a condition being satisfied, determining a reference signal, wherein the reference signal comprises a quasi co-location reference signal of a first quasi co-location type associated with an activated transmission configuration indication (TCI) state;

determining information of an uplink signal according to the reference signal; and

communicating with a second communication node based on the information,

wherein the condition comprises:

the first communication node is not provided with spatial relationship information of the uplink signal, and

a serving cell where the uplink signal is located does not comprise a control resource set (CORESET).

2. The method of claim 1, wherein the activated TCI state is applied to a PDSCH and has a minimum TCI state identifier.

3. The method of claim 1, wherein the determining the information of the uplink signal comprises:

determining a path loss reference signal of the uplink signal according to the reference signal.

4. The method of claim 1, wherein the uplink signal comprises a sounding reference signal (SRS).

5. A communication node comprising:

a processor and a memory, wherein, when the processor reads instructions from the memory, the processor is configured to perform:

in response to a condition being satisfied, determining a reference signal, wherein the reference signal comprises a quasi co-location reference signal of a first quasi co-location type associated with an activated transmission configuration indication (TCI) state;

determining information of an uplink signal according to the reference signal; and

communicating with a second communication node based on the information,

wherein the condition comprises:

the communication node is not provided with spatial relationship information of the uplink signal, and

a serving cell where the uplink signal is located does not comprise a control resource set (CORESET).

6. The communication node of claim 5, wherein the activated TCI state is applied to a PDSCH and has a minimum TCI state identifier.

7. The communication node of claim 5, wherein the determining the information of the uplink signal comprises:

determining a path loss reference signal of the uplink signal according to the reference signal.

8. The communication node of claim 5, wherein the uplink signal comprises a sounding reference signal (SRS).

9. A method for communication between a first communication node and a second communication node, the method applied to the second communication node, and the method comprising:

communicating with the first communication node based on information of an uplink signal, wherein:

the information of the uplink signal is determined according to a reference signal;

the reference signal, comprising a quasi co-location reference signal of a first quasi co-location type associated with an activated transmission configuration indication (TCI) state, is determined in response to a condition being satisfied; and

the condition comprises:

the first communication node is not provided with spatial relationship information of the

uplink signal, and

a serving cell where the uplink signal is located does not comprise a control resource set (CORESET).

10. The method of claim 9, wherein the activated TCI state is applied to a PDSCH and has a minimum TCI state identifier.

11. The method of claim 9, wherein:

the information of the uplink signal being determined according to the reference signal comprises a path loss reference signal of the uplink signal being determined according to the reference signal.

12. The method of claim 9, wherein the uplink signal comprises a sounding reference signal (SRS).

13. A communication node comprising:

a processor and a memory, wherein, when the processor reads instructions from the memory, the processor is configured to perform:

communicating with an other communication node based on information of an uplink signal, wherein:

the information of the uplink signal is determined according to a reference signal;

the reference signal, comprising a quasi co-location reference signal of a first quasi co-location type associated with an activated transmission configuration indication (TCI) state, is determined in response to a condition being satisfied; and

the condition comprises:

the other communication node is not provided with spatial relationship information of the uplink signal, and

a serving cell where the uplink signal is located does not comprise a control resource set (CORESET).

14. The communication node of claim 13, wherein the activated TCI state is applied to a PDSCH

and has a minimum TCI state identifier.

15. The communication node of claim 13, wherein:

the information of the uplink signal being determined according to the reference signal comprises a path loss reference signal of the uplink signal being determined according to the reference signal.

16. The communication node of claim 13, wherein the uplink signal comprises a sounding reference signal (SRS).

17. A non-transitory storage medium, stored therein a computer program, wherein the computer program, when executed by a processor of a communication node, causing the processor to perform the method of claim 1.

18. A non-transitory storage medium, stored therein a computer program, wherein the computer program, when executed by a processor of a communication node, causing the processor to perform the method of claim 9.