CLAIMS

1. A method for wireless communication at a user equipment, UE, comprising:

receiving a configuration of a first one or more channel state information, CSI, reference signal, CSI-RS, resources for channel measurement and a configuration of a second one or more CSI-RS resources for interference measurement (1605);

characterised by:

receiving an indicator indicating a categorization of each port used to transmit on the second one or more CSI-RS resources for interference measurement as corresponding to one of a first type of layer or a second type of layer (1610) wherein the first type of layer or the second type of layer is a non-linear precoding layer; and

transmitting a CSI report based at least in part on the configuration of the first one or more CSI-RS resources, the configuration of the second one or more CSI-RS resources, and the categorization (1615).

2. The method of claim 1, further comprising transmitting a support indicator that indicates a defined number of ports associated with the first type of layer in the second one or more CSI-RS resources, the second type of layer in the second one or more CSI-RS resources, or both, capable of being supported by the UE.

3. The method of claim 1, wherein the report indicates CSI determined based at least in part on the channel measurement, one or more of the interference measurements, or both.

4. The method of claim 1, wherein the indicator comprises one or more indexes of the first one or more CSI-RS resources, the method further comprising:

identifying the categorization of each port used to transmit on the second one or more CSI-RS resources based at least in part on the one or more indexes of the first one or more CSI-RS resources.

5. The method of claim 1, wherein the indicator comprises one or more indexes of the first one or more CSI-RS resources, the method further comprising:

identifying the categorization of each port used to transmit on the second one or more CSI-RS resources based at least in part on the one or more indexes of the first one or more CSI-RS resources; and

determining that all ports used to transmit on a same resource of the second one or more CSI-RS resources have a same categorization; and

determining the categorization of each port used to transmit on each CSI-RS resource of the second one or more CSI-RS resources based at least in part on a comparison of an index of a respective CSI-RS resource with the one or more indexes of the first one or more CSI-RS resources.

6. The method of claim 1, wherein the indicator comprises a bitmap, the method further comprising:

determining that all ports used to transmit on a same resource of the second one or more CSI-RS resources have a same categorization; and

identifying the categorization of each port used to transmit on each CSI-RS resource of the second one or more CSI-RS resources based at least in part on the bitmap, wherein a number of bits in the bitmap is equal to a number of resources of the second one or more CSI-RS resources.

7. The method of claim 1:

i) wherein the indicator comprises a bitmap, the method further comprising:

identifying the categorization of each port used to transmit on each CSI-RS resource of the second one or more CSI-RS resources based at least in part on the bitmap, wherein the number of bits in the bitmap is equal to a number of ports used to transmit on all of the second one or more CSI-RS resources; or

ii) wherein the indicator comprises a bitmap, the method further comprising:

identifying a code division multiplexing, CDM, type applied for transmission on each resource of the second one or more CSI-RS resources;

determining that all ports used to transmit on a resource of the second one or more CSI-RS resources associated with a same CDM group have a same categorization; and

determining the categorization based at least in part on a bitmap, wherein a number of bits in the bitmap is equal to a number of CDM groups applied for transmission on all of the second one or more CSI-RS resources.

8. The method of claim 1, wherein the indicator comprises a row index, the method further comprising:

identifying a first configuration table of a plurality of configuration tables; and

categorizing each port used to transmit on each of the second one or more CSI-RS resources as corresponding to one of the first type of layer or the second type of layer by indexing the first configuration table based at least in part on the row index.

9. The method of claim 1, wherein the indicator comprises one or more indexes of the first one or more CSI-RS resources, the method further comprising:

identifying indexes of the first one or more CSI-RS resources based at least in part on the indicator;

identifying a first configuration table of a plurality of configuration tables; and

categorizing each port used to transmit on each of the second one or more CSI-RS resources as corresponding to one of the first type of layer or the second type of layer by indexing the first configuration table based at least in part on the identified indexes of the first one or more CSI-RS resources.

10. The method of claim 1, further comprising:

determining one or more parameters based at least in part on the first one or more CSI-RS resources, the second one or more CSI-RS resources, and the categorization, wherein the CSI report comprises the one or more parameters.

11. The method of claim 6:

i) wherein the CSI report comprises at least a channel quality indicator, CQI, and the CQI is computed based at least in part on the one or more parameters;

ii) wherein determining the one or more parameters further comprises:

generating the channel measurement based at least in part on measuring the first one or more CSI-RS resources;

generating a first interference measurement based at least in part on measuring the second one or more CSI-RS resources categorized as corresponding to the first type of layer;

generating a second interference measurement based at least in part on measuring the second one or more CSI-RS resources categorized as corresponding to the second type of layer; and

determining the one or more parameters based at least in part on the channel measurement, the first interference measurement, and the second interference measurement; or

iii) wherein:

reporting the amplitude and phase of a parameter of the one or more parameters comprises reporting a first value corresponding to a defined bandwidth and a second value corresponding to a portion of the defined bandwidth, wherein the second value comprises an offset relative to the first value.

12. A method for wireless communication at a base station, comprising:

transmitting a configuration of a first one or more channel state information, CSI, reference signal, CSI-RS, resources for channel measurement and a configuration of a second one or more CSI-RS resources for interference measurement (1705);

characterised by:

transmitting an indicator indicating a categorization of each port used to transmit on the second one or more CSI-RS resources for interference measurement as corresponding to one of a first type of interference layer or a second type of interference layer (1710) wherein the first type of layer or the second type of layer is a non-linear precoding layer;

transmitting CSI-RSs in each of the first one or more CSI-RS resources and the second one or more CSI-RS resources in accordance with the indicator (1715); and

receiving a report based at least in part on the categorization (1720).

13. The method of claim 12, further comprising one of the following:

i) receiving a support indicator that indicates a defined number of ports associated with the first type of layer in the second one or more CSI-RS resources, the second type of layer in the second one or more CSI-RS resources, or both, capable of being supported by a user equipment, UE;

ii) wherein the report indicates a parameter determined based at least in part on the CSI-RSs and the categorization;

iii) wherein the report indicates a parameter determined based at least in part on the CSI-RSs and the categorization and wherein the report comprises at least a channel quality indicator, CQI, and the CQI is computed based at least in part on the parameter

iv) wherein the report indicates a parameter determined based at least in part on the CSI-RSs and the categorization and wherein the report indicates an amplitude and phase of the parameter;

v) wherein the report indicates a parameter determined based at least in part on the CSI-RSs and the categorization and wherein the report indicates an amplitude and phase of the parameter corresponding to a defined bandwidth;

vi) wherein the report indicates a first value corresponding to a defined bandwidth and a second value corresponding to a portion of the defined bandwidth, and wherein the second value comprises an offset relative to the first value;

vii) wherein the indicator comprises one or more CSI-RS resource indexes, one or more group indexes, one or more row indexes, one or more group table indexes, or any combination thereof

viii) wherein the indicator comprises a bitmap;

ix) wherein the indicator comprises a bitmap and wherein a number of bits in the bitmap corresponds to a number of interference layers; or

x) wherein the indicator indicates a first configuration table of a plurality of configuration tables based at least in part on a number of the second one or more CSI-RS resources.

14. An apparatus for wireless communication at a user equipment, UE, comprising:

a processor,

memory in electronic communication with the processor; and

instructions stored in the memory and executable by the processor to cause the apparatus to:

receive a configuration of a first one or more channel state information, CSI, reference signal, CSI-RS, resources for channel measurement and a configuration of a second one or more CSI-RS resources for interference measurement;

characterised by:

receive an indicator indicating a categorization of each port used to transmit on the second one or more CSI-RS resources for interference measurement as corresponding to one of a first type of layer or a second type of layer wherein the first type of layer or the second type of layer is a non-linear precoding layer; and

transmit a CSI report based at least in part on the configuration of the first one or more CSI-RS resources, the configuration of the second one or more CSI-RS resources, and the categorization.

15. An apparatus for wireless communication at a base station, comprising:

a processor,

memory in electronic communication with the processor; and

instructions stored in the memory and executable by the processor to cause the apparatus to:

transmit a configuration of a first one or more channel state information, CSI, reference signal, CSI-RS, resources for channel measurement and a configuration of a second one or more CSI-RS resources for interference measurement;

characterised by:

transmit an indicator indicating a categorization of each port used to transmit on the second one or more CSI-RS resources for interference measurement as corresponding to one of a first type of interference layer or a second type of interference layer wherein the first type of layer or the second type of layer is a non-linear precoding layer;

transmit CSI-RSs in each of the first one or more CSI-RS resources and the second one or more CSI-RS resources in accordance with the indicator; and

receive a report based at least in part on the categorization.