CLAIMS

1. A method for wireless communications by a base station (BS), comprising: adaptively selecting a modulo base, from a set of candidate modulo bases, for a data stream for at least one user equipment (UE) in a transmission to one or more UEs, wherein the modulo base is selected based on one or more parameters; transmitting a signal for at least one UE of the one or more UEs to identify the selected modulo base; and performing the transmission to the one or more UEs.

2. The method of claim 1, wherein performing the transmission comprises: perturbing a constellation symbol, generated based on the data stream, in an original constellation to a different constellation to account for predicted interference between at least two UEs; and performing a modulo operation to return the perturbed constellation symbol to the original constellation.

3. The method of claim 1, wherein the one or more parameters comprises at least one of: a modulation order of the data stream of the at least one UE, a signal-to-noise-ratio (SNR) of the at least one UE, or a signal-to-noise-plus-interference ratio (SINR) of the at least one UE, or accuracy of channel state information (CSI) of the one or more UEs obtained by the BS.

4. The method of claim 3, wherein the adaptive selection comprises; increasing the modulo base if the SNR or SINR is below a threshold or the accuracy of the CSI obtained by the BS is below a threshold; and decreasing the modulo base if SNR or SINR is above a threshold or the accuracy of the CSI obtained by the BS is above a threshold.

5. The method of claim 1, further comprising: adaptively re-selecting the modulo base for subsequent transmissions based on changes to the one or more parameters.

6. The method of claim 2, further comprising receiving an indication from the at least one UE of a capability of the UE for performing a modulo operation, wherein the adaptive selection and transmission based on modulo operation are in response to the indication.

7. The method of claim 1, wherein the set of candidate modulo bases comprises a first set of candidate modulo bases applied to a first modulation order, and a second set of candidate modulo bases applied to a second modulation order.

8. The method of claim 7, wherein the set of candidate modulo bases comprises: a first candidate modulo base of the first set of candidate modulo bases for the first modulation order obtained based on a first scaling factor and the first modulation order; and a second candidate modulo base of the second set of candidate modulo bases for the second modulation order obtained based on the first scaling factor and the second modulation order.

9. The method of claim 8, wherein the set of candidate modulo bases further comprises: a third candidate modulo base of the first set of candidate modulo bases for the first modulation order obtained based on a second scaling factor and the first modulation order; and a fourth candidate modulo base of the second set of candidate modulo bases for the second modulation order obtained based on the second scaling factor and the second modulation order.

10. The method of claim 7, wherein: adaptively selecting the modulo base comprises determining one modulo base from the first or second set of candidate modulo bases; the signal for the at least one UE to identify the selected modulo base comprises transmitting at least one of the modulation order or a coding scheme to the UE; and the at least one of the modulation order or the coding scheme corresponds to the selected modulo base.

11. The method of claim 10, wherein: the signal for the at least one UE to identify the selected modulo base further comprises transmitting an indicator of the selected modulo base; and the indicator together with the at least one of the modulation order or the coding scheme corresponds to selected modulo bases.

12. The method of claim 11, wherein the indicator is signaled to the UE via at least one of: downlink control information (DCI), radio resource control (RRC) signaling, or a medium access control (MAC) control element (CE).

13. The method of claim 1, wherein the set of candidate modulo bases is fixed in a specification.

14. The method of claim 1, wherein the set of candidate modulo bases is configured via higher layer signaling.

15. The method of claim 14, wherein the higher layer signaling comprises radio resource control (RRC) signaling or a medium access control (MAC) control element (CE).

16. The method of claim 15, wherein: the set of candidate modulo bases is first configured via RRC; and a subset of the set of candidate modulo bases is configured by the MAC-CE.

17. A method for wireless communications by a user equipment (UE), comprising: receiving a transmission from a base station (BS) comprising one or more data streams for the UE; receiving a signal from the BS for an identification of a modulo base applied to at least one of the one or more data streams; selecting the modulo base, from a set of candidate modulo bases, for at least one of the one or more data streams based on the signal; and decoding the at least one data stream using the modulo base.

18. The method of claim 17, wherein the decoding comprises: performing a modulo operation to the received transmission.

19. The method of claim 17, further comprising providing an indication to the BS of a capability of the UE for performing a modulo operation.

20. The method of claim 17, wherein the set of candidate modulo bases comprises a first set of candidate modulo bases applied to a first modulation order, and a second set of candidate modulo bases applied to a second modulation order.

21. The method of claim 20, wherein the set of candidate modulo bases comprises: a first candidate modulo base of the first set of candidate modulo bases for the first modulation order obtained based on a first scaling factor and the first modulation order; and a second candidate

modulo base of the second set of candidate modulo bases for the second modulation order obtained based on the first scaling factor and the second modulation order.

22. The method of claim 21, wherein the set of candidate modulo bases further comprises: a third candidate modulo base of the first set of candidate modulo bases for the first modulation order obtained based on a second scaling factor and the first modulation order; and a fourth candidate modulo base of the second set of candidate modulo bases for the second modulation order obtained based on the second scaling factor and the second modulation order.

23. The method of claim 20, wherein: selecting the modulo base, from the set of candidate modulo bases, for the at least one data stream comprises selecting one modulo base from the first or second set of candidate modulo bases; the signal for the UE to identify the selected modulo base indicates at least one of the modulation order or a coding scheme; and the at least one of the modulation order or the coding scheme corresponds to the selected modulo base.

24. The method of claim 23, wherein: the signal for the UE to identify the selected modulo base further comprises an indicator of the selected modulo base; and the indicator together with the at least one of the modulation order or the coding scheme corresponds to selected modulo bases.

25. The method of claim 24, wherein the indicator is received via at least one of: downlink control information (DCI), radio resource control (RRC) signaling, or a medium access control (MAC) control element (CE).

26. The method of claim 17, wherein the set of candidate modulo bases is fixed in a specification.

27. The method of claim 17, wherein the set of candidate modulo bases is configured via higher layer signaling.

28. The method of claim 27, wherein the higher layer signaling comprises radio resource control (RRC) signaling or a medium access control (MAC) control element (CE).

29. The method of claim 28, wherein: the set of candidate modulo bases is first configured via RRC; and a subset of the set of candidate modulo bases in configured by the MAC-CE.