

CLAIMS

1. A method of wireless communication, comprising:
measuring, by a first device, interference on a wireless channel;
identifying an interfering device for the wireless channel based on the measured interference;
predicting an impact to a data rate over the wireless channel when at least one of an interference cancelation operation or a joint detection operation is performed;
generating at least one channel side information feedback message based on the measured interference on the wireless channel, wherein the at least one channel side information feedback message indicates the interfering device for the wireless channel, a correlation of the measured interference from the interfering device with time or frequency, and a correlation of a residual interference from the interfering device with time or frequency based at least in part on the predicted impact;
and
transmitting the at least one channel side information feedback message to a second device.
2. The method of claim 1, wherein identifying the interfering device for the wireless channel comprises:
determining that a strength of the measured interference from the interfering device satisfies a threshold.
3. The method of claim 1, wherein the at least one channel side information feedback message comprises an identity of the interfering device.

4. The method of claim 1, further comprising:
estimating a periodicity of the measured interference from the interfering device in time or frequency; wherein the correlation of the measured interference comprises the estimated periodicity.
5. The method of claim 1, further comprising:
determining a burst duration associated with the measured interference from the interfering device; wherein the at least one channel side information feedback message comprises the burst duration.
6. The method of claim 5, further comprising:
decoding a portion of an interference signal;
wherein the burst duration is determined based on the decoded portion of the interference signal.
7. The method of claim 5, wherein determining the burst duration comprises:
estimating the burst duration based on the measured interference.
8. The method of claim 1, further comprising:
identifying at least one additional interfering device for the wireless channel based on the measured interference;
wherein the at least one channel side information feedback message indicates the at least one additional interfering device for the wireless channel and a correlation of the measured interference from the at least one additional interfering device with time or frequency.

9. The method of claim 8, wherein the at least one channel side information feedback message indicates a correlation between the measured interference from the interfering device and the measured interference from the at least one additional interfering device.

10. A device for wireless communication, comprising:
means for measuring interference on a wireless channel;
means for identifying an interfering device for the wireless channel based on the measured interference;
means for predicting an impact to a data rate over the wireless channel when at least one of an interference cancelation operation of a joint detection operation is performed;

means for generating at least one channel side information feedback message based on the measured interference on the wireless channel, wherein the at least one channel side information feedback message indicates the interfering device for the wireless channel, a correlation of the measured interference from the interfering device with time or frequency, and a correlation of a residual interference from the interfering device with time or frequency based at least in part on the predicting impact; and

means for transmitting the at least one channel side information feedback message to another device.

11. The device of claim 10, wherein the means for identifying the interfering device for the wireless channel comprises:

means for determining that a strength of the measured interference from the interfering device satisfies a threshold.

12. The device of claim 10, wherein the at least one channel side information feedback message comprises an identity of the interfering device.

13. The device of claim 10, further comprising:
means for estimating a periodicity of the measured interference from the interfering device in time or frequency; wherein the at least one channel side information feedback message comprises the estimated periodicity.

14. The device of claim 10, further comprising:
means for determining a burst duration associated with the measured interference from the interfering device; wherein the correlation of the measured interference comprises the burst duration.

15. The device of claim 14, further comprising:
means for decoding a portion of an interference signal; wherein the burst duration is determined based on the decoded portion of the interference signal.

16. The device of claim 14, wherein the means for determining the burst duration comprises:
means for estimating the burst duration based on the measured interference.

17. The device of claim 10, further comprising:
means for identifying at least one additional interfering device for the wireless channel based on the measured interference;

wherein the at least one channel side information feedback message indicates the at least one additional interfering device for the wireless channel and a correlation of the measured interference from the at least one additional interfering device with time or frequency.

18. The device of claim **17**, wherein the at least one channel side information feedback message indicates a correlation between the measured interference from the interfering device and the measured interference from the at least one additional interfering device.

19. A device for wireless communication, comprising a processor, memory in electronic communication with the processor, and instructions stored in the memory, the instructions being executable by the processor to:

- measure interference on a wireless channel;
- identify an interfering device for the wireless channel based on the measured interference;
- predict an impact to a data rate over the wireless channel when at least one of an interference cancelation operation or a joint detection operation is performed;
- generate at least one channel side information feedback message based on the measured interference on the wireless channel, wherein the at least one channel side information feedback message indicates the interfering device for the wireless channel, a correlation of the measured interference from the interfering device with time or frequency, and a correlation of a residual interference from the interfering device with time or frequency based at least in part on the predicted impact;
- and
- transmit the at least one channel side information feedback message to another device.

20. The device of claim **19**, wherein the instructions are executable by the processor to:

- estimate a periodicity of the measured interference from the interfering device in time or frequency; wherein the at least one channel side information feedback message comprises the estimated periodicity.

21. The device of claim 19, wherein the instructions are executable by the processor to:

determine a burst duration associated with the measured interference from the interfering device; wherein the correlation of the measured interference comprises the burst duration.

22. A non-transitory computer-readable medium storing instructions executable by a processor to cause a device to:

measure interference on a wireless channel;

identify an interfering device for the wireless channel based on the measured interference;

predict an impact to a data rate over the wireless channel when at least one of an interference cancelation operation or a joint detection operation is performed;

generate at least one channel side information feedback message based on the measured interference on the wireless channel, wherein the at least one channel side information feedback message indicates the interfering device for the wireless channel, a correlation of the measured interference from the interfering device with time or frequency, and a correlation of a residual interference from the interfering device with time or frequency based at least in part on the predicted impact; and

transmit the at least one channel side information feedback message to another device.

23. A method of wireless communication, comprising:

transmitting a wireless signal to a device over a wireless channel; and

receiving at least one channel side information feedback message from the device, wherein the at least one channel side information feedback message indicates an interfering device for the wireless channel, a corre-

lation of interference from the interfering device with time or frequency, at least one additional interfering device for the wireless channel, a correlation of measured interference from the at least one additional interfering device with time or frequency, and a correlation between the measured interference from the interfering device and the measured interference from the at least one additional interfering device.

24. The method of claim **23**, further comprising:
transmitting to the device an indication of the wireless channel for which the correlation of interference from an interfering device is to be reported.

25. The method of claim **23**, wherein the at least one channel side information feedback message comprises an identity of the interfering device.

26. The method of claim **23**, wherein the at least one channel side information feedback message comprises a periodicity of the interference from the interfering device in time or frequency.

27. The method of claim **23**, wherein the correlation of the measured interference comprises a burst duration of the interference from the interfering device.

28. The method of claim **23**, wherein the correlation of the measured interference comprises a correlation of residual interference for the interfering device with time and/or frequency.

29. A device for wireless communication, comprising:
means for transmitting a wireless signal to another device over a wireless channel; and

means for receiving at least one channel side information feedback message from the another device, wherein the at least one channel side information feedback message

indicates an interfering device for the wireless channel, a correlation of interference from the interfering device with time or frequency, at least one additional interfering device for the wireless channel, a correlation of measured interference from the at least one additional interfering device with time or frequency, and a correlation between the measured interference from the interfering device and the measured interference from the at least one additional interfering device.

30. The device of claim **29**, further comprising:

means for transmitting to the another device an indication of the wireless channel for which the correlation of interference from an interfering device is to be reported.

31. The device of claim **29**, wherein the at least one channel side information feedback message comprises an identity of the interfering device.

32. The device of claim **29**, wherein the at least one channel side information feedback message comprises a periodicity of the interference from the interfering device in time or frequency.

33. The device of claim **29**, wherein the correlation of the measured interference comprises a burst duration of the interference from the interfering device.

34. The device of claim **29**, wherein the correlation of the measured interference comprises a correlation of residual interference for the interfering device with time and/or frequency.

35. A device for wireless communication, comprising a processor, memory in electronic communication with the processor, and instructions stored in the memory, the instructions being executable by the processor to:

transmit a wireless signal to another device over a wireless channel; and

receive at least one channel side information feedback message from the another device, wherein the at least one channel side information feedback message indicates an interfering device for the wireless channel, a correlation of interference from the interfering device with time or frequency, at least one additional interfering device for the wireless channel, a correlation of measured interference from the at least one additional interfering device with time or frequency, and a correlation between the measured interference from the interfering device and the measured interference from the at least one additional interfering device.

36. The device of claim **35**, wherein the instructions are executable by the processor to:

transmit to the another device an indication of the wireless channel for which the correlation of interference from an interfering device is to be reported.

37. The device of claim **35**, wherein the at least one channel side information feedback message comprises an identity of the interfering device.

38. The device of claim **35**, wherein the correlation of the measured interference comprises a correlation of residual interference for the interfering device with time and/or frequency.

39. A non-transitory computer-readable medium storing instructions executable by a processor to cause a device to: transmit a wireless signal to another device over a wireless channel; and receive at least one channel side information feedback message from the another device, wherein the at least one channel side information feedback message indicates an interfering device for the wireless channel, a correlation of interference from the interfering device with time or frequency, at least one additional interfering device for the wireless channel, a correlation of measured interference from the at least one additional interfering device with time or frequency, and a correlation between the measured interference from the interfering device and the measured interference from the at least one additional interfering device.