Interference Reducing Beamforming Technique for Ultra-Broadband Signals

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Transit beamforming is a signal processing technique that has a diverse range of applications, from radar and wireless communications to biomedicine. In wireless radio frequency systems, beamforming techniques are used to suppress multipath dispersion and reduce interference; however, current techniques either show poor performance in high-speed communications or have a high implementation complexity.

Researchers at Purdue University have developed a new beamforming technique called phase compensation, which can be used to suppress multipath channel dispersions and greatly reduce intersymbol interference in high-speed wireless communications. This technique combats multipath channel dispersions more efficiently than other beamforming techniques such as time reversal and minimum mean squared error. The phase compensation technique has low computation cost and provides spatiotemporal focusing for high-speed covert wireless communications.

Advantages:
-Superior spatiotemporal focusing performance
-Low computation cost
-Greatly reduced intersymbol interference

Potential Applications:
-Wireless communication
-Electronics manufacturers

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