

China (No. A1098522-02) and joint laboratory project of UESTC-713 short-wave & ultra-short-wave array signal processing.

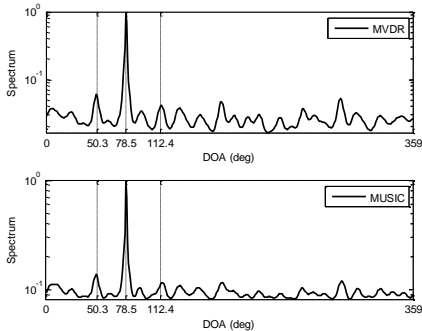


Fig. 1. Spatial spectrum of MVDR and MUSIC.

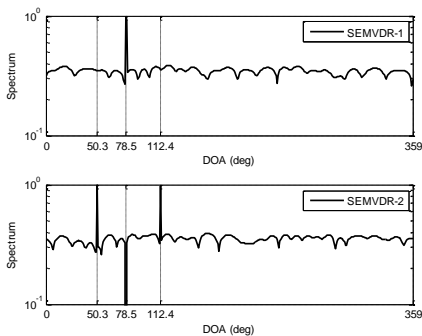


Fig. 2. Spatial spectrum of two-step's sparsity enhanced MVDR (SEMVDR-1 and SEMVDR-2).

7. References

- [1] Q. Wan, B. G. Xu, J. H. Yin, F. Fang, Y. H. Wan, S. L. Tang, "An approach to manifold estimation for antenna array in situation of interferences," IET International Radar Conference 2013, Xi An, China, Apr. 14-16, 2013
- [2] J. Capon, "High resolution frequency-wavenumber spectrum analysis," Proc. IEEE, vol. 57, no. 8, pp.1408-1418, Aug. 1969.
- [3] Y.P. Liu, Q. Wan, " Robust beamformer based on total variation minimisation and sparse constraint," Electronic Letters, vol.46, no.25, pp.1697-1699, 2010.
- [4] Y. Zhang, B.P. Ng and Q. Wan, Side-lobe suppression for adaptive beamforming with sparse constraint on beam pattern, Electronics Letters, vol.44, no.10, pp.615-616, 2009.
- [5] R. O. Schmidt, "Multiple emitter location and signal parameter estimation," IEEE Trans. Antennas Propag., vol. 34, no. 3, pp.276-280, Mar. 1986.
- [6] M. D. Sacchi, T. J. Ulrych, and C. J. Walker, "Interpolation and extrapolation using a high-resolution discrete fourier transform," IEEE Trans. Signal Process., vol. 46, no. 1, pp.31-38, Jan. 1998.
- [7] B. D. Jeffs, "Sparse inverse solution methods for signal and image processing applications," Proc. IEEE Int. Conf. Acoust., Speech, Signal Process., vol. 3, pp.1885-1888, 1998.
- [8] I. F. Gorodnitsky, and B. D. Rao, "Sparse signal reconstruction from limited data using FOCUSS: A re-weighted minimum norm algorithm," IEEE Trans. Signal Process., vol. 45, no. 3, pp.600-616, Mar. 1997.
- [9] J. J. Fuchs, "On the application of the global matched filter to DOA estimation with uniform circular arrays," IEEE Trans. Signal Process., Vol. 49, No. 4, pp.702-709, Apr. 2001.
- [10] D. M. Malioutov, M. Cetin, and A. S. Willsky, "A sparse signal reconstruction perspective for source localization with sensor arrays," IEEE Trans. Signal Process., vol. 53, no. 8, pp.3010-3022, Aug. 2005.
- [11] E. J. Cands, M. B. Wakin, and S. P. Boyd, "Enhancing sparsity by reweighted L1 minimization," Journal of Fourier Analysis and Applications, vol. 14, no. 5, pp.877-905, Dec. 2008.