Errata: Lattice theory, circular statistics and polynomial phase signals

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1. Page 63, final paragraph. It is claimed that the lattices $V^*_{n/m}$ have an *obtuse superbasis*, i.e. they are of *Voronoi's first type*. This is false. Cases can be found where the Selling parameters of these lattices are positive.

2. Section 4.2.2, page 57. It is stated that

   > A generator matrix for $V^*_{n/m}$ is easily derived as any n columns of the $N \times N$ orthogonal projection matrix
   >
   > $$\mathbf{Q} = \mathbf{I} - \mathbf{X}(\mathbf{X}^\dagger\mathbf{X})^{-1}\mathbf{X}^\dagger. \qquad (4.2.12)$$

   This is not quite correct. You must take n *consecutive* columns of the generator matrix.

3. Page 152, third paragraph. It is stated that the K-best algorithm requires $O(K^2N^2 \log K)$ operations. This should read $O(K^2N \log K)$ operations.

4. The terms "unwrapped mean" and "unwrapped variance" also go by the name "intrinsic mean" and "intrinsic variance" in the literature [Bhattacharya and Patrangenaru, 2003, 2005; Ziezold, 1977]. I was unfortunately unaware of this at the time. This omission was amended in the paper [McKilliam et al., 2012].

References

Bhattacharya, R. N. and Patrangenaru, V. [2003]. Large sample theory of intrinsic and extrinsic sample means on manifolds I. *Annals of Statistics*, 31(1), 1–29.

Bhattacharya, R. N. and Patrangenaru, V. [2005]. Large sample theory of intrinsic and extrinsic sample means on manifolds II. *Annals of Statistics*, 33(3), 1225–1259.

McKilliam, R. G., Quinn, B. G. and Clarkson, I. V. L. [2012]. Direction estimation by minimum squared arc length. *IEEE Trans. Sig. Process.*, 60(5), 2115–2124.

Ziezold, H. [1977]. On expected figures and a strong law of large numbers for random elements in quasi-metric spaces. *Transactions of the 7th Prague Conference on Information Theory, Random Processes A*, pp. 591–602.