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Chapter (accepted):

Many particles inverse problem for two-dimensional composites,

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Abstract Randomly distributed non-overlapping perfectly conducting n spheres of radii r_k ($k = 1, 2, \dots, n$) are embedded in a conducting matrix occupying a large ball of the normalized unit radius. The potential and the normal flux are given on the boundary of large ball. The locations of inclusions a_k are not known. A perturbation term induced by inclusions is constructed in general case and studied up to $O(R^4)$ for equal spheres when $R = r_k$. It includes the unknown centers of inclusions in symbolic form. The inverse problem is reduced to determination of the centers a_k by fitting of the given perturbation term on the unit sphere. **Keywords:** random composites with spherical inclusions, perturbation term, inverse stationary problem, inverse problem with passive inclusions 2010 MSC: 74B05, 74A40, 74E10