

is a tiling corresponding to Fig. 3(a). Alternatively, this tiling may be obtained by the projection method in which the four-dimensional hyperlattice spanned by four orthonormal basis vectors ($e_1, 2e_2, e_3, 2e_4$) is divided into two subspaces (e_1, e_3 and $2e_2, 2e_4$) each of two dimensions. Fig. 3(b) is not locally isomorphic to Fig. 1(b) or Fig. 2(b). Also, Fig. 3(b) does not possess the self-similarity property. It is therefore reinforced that not all quasiperiodic tilings have self-similarity as an essential property and therefore the self-similarity property cannot be used to establish the quasiperiodicity of a tiling, in contrast to the view of Clark & Suryanarayan (1991). Since quasiperiodicity implies a continuum in a higher-dimensional space, one should 'lift' (Levitov, 1988) a tiling obtained by self-similarity to a higher space to prove its quasiperiodicity.

One can construct quasiperiodic tilings with rotational symmetries of order two, three and six by suitable choice of the starting grid with more than one spacing. The construction of three-dimensional tilings from a decorated four-dimensional lattice leads to potential models for incommensurate phases when the projection is made onto the octahedron.

We thank Professors S. Ranganathan, S. Lele and P. Ramachandra Rao for various discussions. This work is

supported by the Department of Science and Technology of the Government of India.

References

- BAK, P. (1986). *Phys. Rev. Lett.* **56**, 861-864.
 BARANIDHARAN, S., BALAGURUSAMY, V. S. K., SRINIVASAN, A., GOPAL, E. S. R. & SASISEKHARAN, V. (1989). *Phase Transit.* **16/17**, 621-625.
 BRUIJN, N. G. DE (1981). *Proc. K. Ned. Akad. Wet. Ser. A*, **84**, 39-61.
 CLARK, D. S. & SURYANARAYAN, E. (1991). *Acta Cryst.* **A47**, 498-503.
 DUNEAU, M. & KATZ, A. (1985). *Phys. Rev. Lett.* **54**, 2688-2691.
 ELSEY, V. (1986). *Acta Cryst.* **A42**, 36-43.
 GAHLER, F. & RHYNER, J. (1986). *J. Phys. A*, **19**, 267-277.
 KRAMER, P. & NERI, R. (1984). *Acta Cryst.* **A40**, 580-587.
 LEVITOV, L. S. (1988). *Commun. Math. Phys.* **119**, 627-666.
 PENROSE, R. (1974). *Bull. Inst. Math. Appl.* **10**, 266-271.
 SASISEKHARAN, V., BARANIDHARAN, S., BALAGURUSAMY, V. S. K., SRINIVASAN, A. & GOPAL, E. S. R. (1989). *Pramana*, **33**, 405-420.
 SHECHTMAN, D., BLECH, I., GRATIAS, D. & CAHN, J. W. (1984). *Phys. Rev. Lett.* **53**, 1951-1953.
 SOCOLAR, J. E. S. (1989). *Phys. Rev. B*, **39**, 10519-10551.
 STEINHARDT, P. J. & OSTLUND, S. (1987). *The Physics of Quasicrystals*. Singapore: World Scientific.

Books Received

Acta Cryst. (1992). **A48**, 784

The following books have been received by the Editor. Brief and generally uncritical notices are given of works of marginal crystallographic interest; occasionally a book of fundamental interest is included under this heading because of difficulty in finding a suitable reviewer without great delay.

High-resolution transmission electron microscopy. Edited by PETER BUSECK, JOHN COWLEY and LEROY EYRING. Pp. xxii+645. Oxford University Press, Oxford and New York, 1988. Price £50.00. ISBN 0-19-504275-1. A review of this book, by Alain Bourret, has been published in the June 1992 issue of *Journal of Applied Crystallography*, pages 463-464.