

WALLPAPER ARRANGEMENTS WITH DISCRETE ROTATIONAL SYMMETRY BY TAMÁS F. FARKAS

Tamás F. Farkas is a well known graphic artist in Hungary; some of his constructions are made from sticks. Sticks formed regular solids in Leonardo da Vinci's drawings to the book of Luca Paccioli. F. Farkas developed the idea for the 3D representation of 4D solids by similar sticks as edges of these solids. But it was impossible to imagine all connections of edges of regular 4D solids, thus some simplification was necessary in such drawings, in respect to the projection of 4D to 3D, represented in 2D graphics. Viewing the *Hypercube* of F. Farkas we can recognize the complexity of the structure, and the simplifications by the drawing which preserved this complexity in rotational symmetry.

This rotational symmetry has been preserved as he prefers this symmetry operation in his new 2D arrangements. Most of his new structures are composed from repeating 'molecules' with 2-fold or 3-fold rotational symmetry, so giving dynamics to his compositions. Another dynamical aspect of his arrangements is the 'vibration' of the surface because of the equal surface covering by black and white regions. Moreover, some of his arrangements look like a maze, a labyrinth for the running eyes. On some other arrangements the plane-structures emerge from the plane of drawing, because the 'molecule' also represents an edge-looking skeleton of a spatial solid. This way F. Farkas built into his new structures almost all previous ideas to increase the number of effects emerging when the spectator begins to contemplate on the structure.

We hope that these new structures open a new construction period for the graphic artist, in which he can develop new directions in representing the dynamic structures, and somehow he can preserve the variability and originality of his earlier constructions. Colouring may increase these effects, as we could enjoy it in his period of 80's, when 4D structures and their knot representations from sticks got wonderful, colourful backgrounds from small scale, disordered raster, so emphasizing the regularity of the whole great structure in the focus of attention. These regular arrangements of this recent small introduction need, as the authors feel, an enlargement of one or more elements from the regular background, which enlargement could give another scale to the uniformity of equal molecules. Till the appearance of such larger structures we look at the 'uniform background radiation', and wait for the 'birth of stars'.

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