

# CEREBELLAR NEURONAL NETWORK ACTING AS A SPACE-TIME METRIC TENSOR

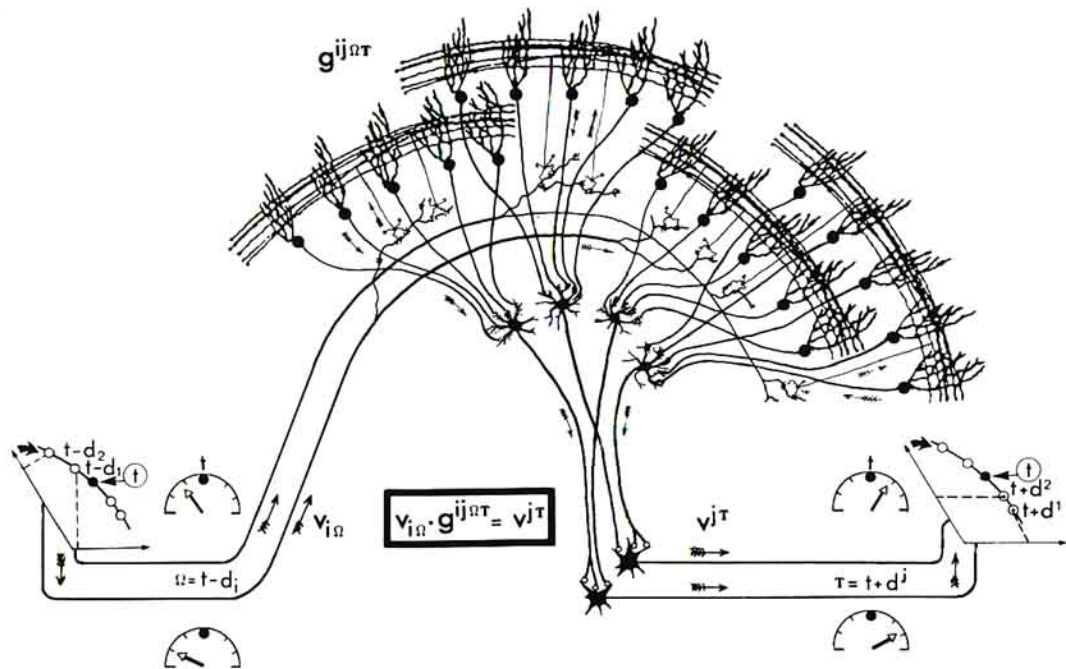


Fig. 7. Circuitry layout of an implicit space-time metric tensor. This network is identical to the one shown schematically in Fig. 6, only the physical layout of the network is different. Such morphologically realistic representation is necessary in order to demonstrate that the abstract conceptual scheme does, indeed, conform with the morphology of existing neuronal networks in the brain. The input vector to this scheme is  $v_{i\Omega}$ , a covariant two-dimensional vector expressed in sensory frame, the components being asynchronous, referring to  $\Omega = t - d_i$  external time-points. The output is a contravariant vector  $v^j\tau$ : a two-dimensional vector expressed in an identical motor frame, with asynchronous components referring to  $\tau = t + d^j$  external time-points. The network implements a transformation of the input vector to the output, expressing a contravariant space-time metric tensor  $g^{j\Omega\tau}$ .