
Complete Bibliography of Wilfrid Rall

- (A): abstract, (B): book review, (C): book chapter, (J): journal article, (R): report, (T): thesis.
- 1944–1946 (R) Nine classified research reports for the Manhattan Project (at the Metallurgical Laboratory, University of Chicago); some of these reports overlap the next three items.
- 1946 (A) Rall, W. Mass assignments of some radioactive isotopes of Pd and Ir. *Phys. Rev.* 70:112.
- 1947 (J) Shaw, A. E., and W. Rall. An a.c. operated mass spectrograph of the Mattauch type. *Rev. Sci. Insts.* 18:278–288.
- 1948a (A) Rall, W. The packing fraction of Zirconium. *Phys. Rev.* 73:1222.
- 1948b (T) Rall, W. The field of biophysics. Univ. of Chicago M.S. Thesis.
- 1950 (J) Eccles, J. C., and W. Rall. Post-tetanic potentiation of responses of motoneurones. *Nature* 166:465.
- 1951a (J) Eccles, J. C., and W. Rall. Effects induced in a monosynaptic reflex path by its activation. *J. Neurophysiol.* 14:353–376.
- 1951b (J) Brock, L. G., J. C. Eccles, and W. Rall. Experimental investigations on the afferent fibres in muscle nerves. *Proc. Roy. Soc. Lond. Ser. B* 138:453–475.
- 1951c (J) Eccles, J. C., and W. Rall. Repetitive monosynaptic activation of motoneurones. *Proc. Roy. Soc. Lond. Ser. B* 138:475–498.
- 1951d (A) Rall, W. Input-output relation of a monosynaptic reflex. *Proc. U. Otago Med. Sch.* 29:17.
- 1953a (T) Rall, W. Spatial summation and monosynaptic input-output relations in the mammalian spinal cord. Univ. of New Zealand, Ph. D. Thesis; Univ. of Otago, Dunedin, New Zealand.
- 1953b (A) Rall, W. Electrotonic theory for a spherical neurone. *Proc. U. Otago Med. Sch.* 31:14–15.
- 1954 (A) Rall, W. Monosynaptic reflex input-output analysis. *J. Physiol. London* 125:30–31 P.
- 1955a (J) Rall, W. A statistical theory of monosynaptic input-output relations. *J. Cell. Comp. Physiol.* 46:373–411.
- 1955b (J) Rall, W. Experimental monosynaptic input-output relations in the mammalian spinal cord. *J. Cell. Comp. Physiol.* 46:413–437.
- 1956 (J) Rall, W., and C. C. Hunt. Analysis of reflex variability in terms of partially correlated excitability fluctuation in a population of motoneurons. *J. Gen. Physiol.* 39:397–422.
- 1957a (J) Rall, W. Membrane time constant of motoneurons. *Science* 126:454.
- 1957b (A) Rall, W. Theory of electrotonus and synaptic potentials on a spherical nerve model. *Abstracts of First National Biophysics Conference*, Columbus, Ohio, p. 58.
- 1958a (A) Freygang, W. H., K. Frank, W. Rall, and A. McAlister. Evidence for electrical inexcitability of soma-dendritic membrane in motoneurones. *Abstracts of Biophysical Society*, p. 23.
- 1958b (A) Rall, W. Mathematical solutions for passive electrotonic spread between a neuron soma and its dendrites. *Fed. Proc.* 17:127.
- 1958c (B) Rall, W. Book review of “An Introduction to Cybernetics,” by W. Ross Ashby. London: Chapman and Hall, 1956. In *Archives Italiennes de Biologie*, 96:113–114.
- 1959a (R) Rall, W. Dendritic current distribution and whole neuron properties. Naval Medical Research Institute Research Report, NM 0105 00.01.02, pp. 479–525.

- 1959b (J) Rall, W. Branching dendritic trees and motoneuron membrane resistivity. *Exptl. Neurol.* 1:491–527.
- 1960a (J) Rall, W. Membrane potential transients and membrane time constant of motoneurons. *Exptl. Neurol.* 2:503–532.
- 1960b (A) Nelson, P. G., K. Frank, and W. Rall. Single spinal motoneuron extracellular potential fields. *Fed. Proc.* 19:1–5.
- 1960c (B) Rall, W. Book review of “Conduction of Heat in Solids,” by H. S. Carslaw and J. C. Jaeger. Oxford University Press, London, 1959. In *Archives Italiennes de Biologie*, 98:118–119.
- 1961a (R) Rall, W. Mathematical model of dendritic neuron electrophysiology. In *Proceedings of the 3rd IBM Medical Symposium*, Endicott NY pp. 443–489.
- 1961b (A) Frank, K., P. G. Nelson, and W. Rall. Extracellular action potential fields of single motoneurons, and theoretical extracellular action potentials. *Abstracts of First International Biophysics Congress*, Stockholm, p. 244.
- 1962a (J) Rall, W. Theory of physiological properties of dendrites. *Ann. N.Y. Acad. Sci.* 96:1071–1092.
- 1962b (J) Rall, W. Electrophysiology of a dendritic neuron model. *Biophys. J.* 2: (No. 2, part 2) 145–167.
- 1964 (C) Rall, W. Theoretical significance of dendritic trees for neuronal input-output relations. In *Neural Theory and Modeling*, ed. R. F. Reiss. Stanford Univ. Press.
- 1965 (C) Rall, W. Dendritic synaptic patterns: Experiments with a mathematical model. In *Studies in Physiology*, presented to John C. Eccles, ed. D. R. Curtis and A. K. McIntyre. New York: Springer-Verlag.
- 1966 (J) Rall, W., G. M. Shepherd, T. S. Reese, and M. W. Brightman. Dendro-dendritic synaptic pathway for inhibition in the olfactory bulb. *Exptl. Neurol.* 14:44–56.
- 1967a (J) Rall, W. Distinguishing theoretical synaptic potentials computed for different soma-dendritic distributions of synaptic input. *J. Neurophysiol.* 30:1138–1168.
- 1967b (J) Rall, W., R. E. Burke, T. R. Smith, P. G. Nelson, and K. Frank. Dendritic location of synapses and possible mechanisms for the monosynaptic EPSP in motoneurons. *J. Neurophysiol.* 30:1169–1193.
- 1968a (J) Rall, W., and G. M. Shepherd. Theoretical reconstruction of field potentials and dendrodendritic synaptic interactions in olfactory bulb. *J. Neurophysiol.* 31:884–915.
- 1968b (C) Rall, W. Synaptic activity at dendritic locations: Theory and experiment. In *Neural Networks*, ed. E. R. Caianiello. New York: Springer-Verlag.
- 1969a (J) Rall, W. Time constants and electrotonic length of membrane cylinders and neurons. *Biophys. J.* 9:1483–1508.
- 1969b (J) Rall, W. Distributions of potential in cylindrical coordinates and time constants for a membrane cylinder. *Biophys. J.* 9:1509–1541.
- 1970a (C) Rall, W. Dendritic neuron theory and dendrodendritic synapses in a simple cortical system. In *The Neurosciences: Second Study Program*, ed. F. O. Schmidt. New York: Rockefeller Univ. Press.
- 1970b (C) Rall, W. Cable properties of dendrites and effects of synaptic location. In *Excitatory Synaptic Mechanisms*, ed. P. Andersen and J. K. S. Jansen. Oslo: Universitetsforlaget.
- 1971a (A) Rall, W., and J. Rinzel. Dendritic spines and synaptic potency explored theoretically. *Proc. I.U.P.S. (XXV Intl. Congress) IX*:466.
- 1971b (A) Rall, W., and J. Rinzel. Dendritic spine function and synaptic attenuation calculations. *Program and Abstracts Soc. Neurosci. First Annual Mtg.* p. 64.
- 1973 (J) Rall, W., and J. Rinzel. Branch input resistance and steady attenuation for input to one branch of a dendritic neuron model. *Biophys. J.* 13:648–688.
- 1974a (J) Rinzel, J., and W. Rall. Transient response in a dendritic neuron model for current injected at one branch. *Biophys. J.* 14:759–790.

- 1974b (J) Goldstein, S. S., and W. Rall. Changes of action potential shape and velocity for changing core conductor geometry. *Biophys J.* 14:731–757.
- 1974c (R) Rall, W. Dendritic spines, synaptic potency and neuronal plasticity. In *Cellular Mechanisms Subserving Changes in Neuronal Activity*, ed. C. D. Woody, K. A. Brown, T. J. Crow, and J. D. Knispel. Brain Information Service Research Report No. 3, U.C.L.A., Los Angeles, pp. 13–21.
- 1977a (C) Rall, W. Core conductor theory and cable properties of neurons. In *The Handbook of Physiology, The Nervous System, Vol. 1, Cellular Biology of Neurons*, ed. E. R. Kandel, J. M. Brookhart, and V. B. Mountcastle. Bethesda, MD: American Physiological Society.
- 1977b (J) Klee, M., and W. Rall. Computed potentials of cortically arranged populations of neurons. *J. Neurophysiol.* 40:647–666.
- 1978 (C) Rall, W. Dendritic spines and synaptic potency. In *Studies in Neurophysiology, presented to A. K. McIntyre*, ed. R. Porter. Cambridge: Cambridge Univ. Press.
- 1981 (C) Rall, W. Functional aspects of neuronal geometry. In *Neurones without Impulses*, ed. B. M. H. Bush and A. Roberts. Cambridge: Cambridge Univ. Press.
- 1982a (A) Rall, W. Theoretical models which increase R_m with dendritic distance help fit lower value of C_m . *Soc. Neurosci. Abst.* 8:115.11.
- 1982b (A) Miller, J. P., and W. Rall. Effect of dendritic length upon synaptic efficacy. *Soc. Neurosci. Abst.* 8:115.10.
- 1983a (J) Lev-Tov, A., J. P. Miller, R. E. Burke, and W. Rall. Factors that control amplitude of EPSPs in dendritic neurons. *J. Neurophysiol.* 50:399–412.
- 1983b (A) Segev, I., and W. Rall. Theoretical analysis of neuron models with dendrites of unequal electrical lengths. *Soc. Neurosci. Abst.* 9:102.20.
- 1983c (A) Rall, W. Introduction to passive cable properties of neurons. *Proc. IUPS XXIX Intl. Congress*, Sydney, Australia.
- 1984 (A) Segev, I., and W. Rall. EPSP shape indices when dendritic trees have unequal length. *Soc. Neurosci. Abst.* 10:215.12.
- 1985a (C) Rall, W., and I. Segev. Space clamp problems when voltage clamping branched neurons with intracellular microelectrodes. In *Voltage and Patch Clamping with Microelectrodes*, ed. T. G. Smith, H. Lecar, S. J. Redman, and P. Gage. Bethesda, MD: American Physiological Society.
- 1985b (J) Miller, J. P., W. Rall, and J. Rinzel. Synaptic amplification by active membrane in dendritic spines. *Brain Res.* 325:325–330.
- 1985c (J) Shepherd, G. M., R. K. Brayton, J. P. Miller, I. Segev, J. Rinzel, and W. Rall. Signal enhancement in distal cortical dendrites by means of interaction between active dendritic spines. *Proc. Nat. Acad. Sci.* 82:2192–2195.
- 1986 (A) Segev, I., and W. Rall. Excitable dendritic spine clusters: Nonlinear synaptic processing. *Soc. Neurosci. Abst.* 12:196.6
- 1987a (C) Rall, W., and I. Segev. Functional possibilities for synapses on dendrites and dendritic spines. In *Synaptic Function*, ed. G. M. Edelman, W. E. Gall, and W. M. Cowan. New York: Wiley.
- 1987b (C) Rall, W. Neuron, Cable Properties. In *Encyclopedia of Neuroscience*, ed. G. Adelman. Boston: Birkhauser.
- 1987c (A) Holmes, W. R., and W. Rall. Estimating the electrotomographic structure of neurons which cannot be approximated as equivalent cylinders. *Soc. Neurosci. Abst.* 13:422.7.
- 1988a (C) Rall, W., and I. Segev. Synaptic integration and excitable dendritic spine clusters: Structure/function. In *Intrinsic Determinants of Neuronal Form and Function*, ed. R. J. Lasek and M. M. Black. New York: Alan R. Liss.
- 1988b (C) Rall, W., and I. Segev. Dendritic spine synapses, excitable spine clusters and plasticity. In *Cellular Mechanisms of Conditioning and Behavioral Plasticity*, ed. C. D. Woody, D. L. Alkon, and J. L. McGaugh. New York: Plenum Press.
- 1988c (C) Rall, W., and I. Segev. Excitable dendritic spine clusters: Nonlinear synaptic processing. In *Computer Simulation in Brain Science*, ed. R. M. J. Cotterill. Cambridge: Cambridge Univ. Press.

- 1988d (J) Segev, I., and W. Rall. Computational study of an excitable dendritic spine. *J. Neurophysiol.* 60:499–523.
- 1989 (C) Rall, W. Cable theory for dendritic neurons. In *Methods in Neural Modeling: from Synapses to Networks*, ed. C. Koch and I. Segev. Cambridge, MA: The MIT Press.
- 1990a (C) Rall, W., and I. Segev. Dendritic branches, spines, synapses and excitable spine clusters. In *Computational Neuroscience*, ed. E. Schwartz. Cambridge, MA: The MIT Press.
- 1990b (C) Rall, W. Some historical notes. In *Computational Neuroscience*, ed. E. Schwartz. Cambridge, MA: The MIT Press.
- 1990c (C) Rall, W. Perspectives on neuron modeling. In *The Segmental Motor System*, ed. M. D. Binder and L. M. Mendell. Oxford: Oxford Univ. Press.
- 1991 (A) Segev, I., and W. Rall. Computer models of dendritic excitability. *Soc. Neurosci. Abst.* 17:605.5.
- 1992a (C) Rall, W. Functional insights about synaptic inputs to dendrites. In *Analysis and Modeling of Neural Systems*, ed. F. H. Eeckman. Boston: Kluwer Academic Publishers. pp. 63–68.
- 1992b (C) Holmes, W. R., and W. Rall. Electrotonic models of neuronal dendrites and single neuron computation. In *Single Neuron Computation*, ed. T. McKenna, J. Davis, and S. F. Zornetzer. Boston: Academic Press.
- 1992c (C) Rall, W. Path to biophysical insights about dendrites and synaptic function. In *The Neurosciences: Paths of Discovery II*, ed. F. Samson and G. Adelman. Boston: Birkhauser.
- 1992d (J) Rall, W., R. E. Burke, W. R. Holmes, J. J. B. Jack, S. J. Redman, and I. Segev. Matching dendritic neuron models to experimental data. *Physiol. Rev.* 72:S159–S186.
- 1992e (J) Holmes, W. R., I. Segev, and W. Rall. Interpretation of time constant and electrotonic length estimates of multi-cylinder or branched neuronal structures. *J. Neurophysiol.* 68:1401–1420.
- 1992f (J) Holmes, W. R., and W. Rall. Electrotonic length estimates in neurons with dendritic tapering or somatic shunt. *J. Neurophysiol.* 68:1421–1437.
- 1992g (J) Holmes, W. R., and W. Rall. Estimating the electrotonic structure of neurons with compartmental models. *J. Neurophysiol.* 68:1438–1452.
- 1993 (J) Rall, W. Transients in neuron with arbitrary dendritic branching and shunted soma: A commentary for “New and Notable.” *Biophys. J.* 65:15–16.