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Dramatis Personae: Who Did What When

Louis BACHELIER (1870-1946) in 1900: thesis, *Théorie de la spéculation*, launches mathematical finance and introduces Brownian motion

Stefan BANACH (1892-1945): Banach spaces; *Théorie des opérations linéaires*, 1932 (L6)

Jakob BERNOULLI (1654-1705); Bernoulli's theorem, *Ars conjectandi*, posth., 1713 (L6)

Emile BOREL (1871-1956), from 1893 thesis on: Borel sets, Borel hierarchy (L2); Borel-Cantelli Lemmas in 1909 (L13)

Robert BROWN (1773-1858) in 1828: observed Brownian motion

F. P. CANTELLI (1906-1985) in 1917: Borel-Cantelli Lemmas (L13)

Georg CANTOR (1845-1918): 1872, construction of the reals by Cauchy sequences (L6); 1873, rationals (and algebraic numbers) countable (L2, L13); 1874, reals (and transcendental numbers) uncountable (L4)

Constantin CARATHÉODORY (1873-1950) in 1914: Carathéodory's extension theorem for measures (L3)

A. L. CAUCHY (1789-1857) in 1821: Cauchy-Schwarz inequality (for sums) (L9); Cauchy distribution (L24)

P. L. CHEBYSHEV (1821-1894) in 1867: Chebyshev's inequality (L13)

P. J. DANIELL (1889-1946): Daniell integral in 1918 (L4); Daniell-Kolmogorov theorem in 1919 (L9, L17).

Cathérine DOLÉANS (later Doléans-Dade) (d.2004) in 1976: Doléans (stochastic) exponential (L28)

J. L. DOOB (1910-2004) in 1953: Doob's lemma (L9); Stopping Time Principle and Optional Sampling Theorem (L18); Doob decomposition (L19); Doob-Meyer decomposition (L20); Upcrossing Inequality and Martingale Convergence Theorem (Prob8); representation of Browniam nartingales (L29)

F. Y. EDGEWORTH (1845-1926) in 1892: Edgeworth's formula for Gaussian densities (L20)

D. F. EGOROV (1869-1931) in 1911: Egorov's theorem (L9)

A. K. ERLANG (1878-1929) in 1909: Poisson process (telephone traffic) (L23)

Pierre FATOU (1878-1929) in 1906: Fatou's lemma (L7)

Pierre de FERMAT (1601-1665) in 1654: Fermat-Pascal correspondence (L10)

Richard P. FEYNMAN (1918-1988) in 1942: Feynman-Kac formula (L28)

E. S. FISCHER (1875-1954) in 1907: Riesz-Fischer theorem (L6)

R. A. (Sir Ronald) FISHER (1880-1962) in 1920: sufficiency (L16)

Abraham A. FRAENKEL (1891-1965), 1920s: Zermelo-Fraenkel set theory, ZF; ZFC = ZF + AC (L4)

Guido FUBINI (1879-1943) in 1907: Fubini's theorem (L9)

Igor Vladimirovich GIRSANOV (1934-1967) in 1960: Girsanov's theorem (L28)

Alfred HAAR (1885-1933) in 1933: Haar measure (L4)

Hans HAHN (1878-1934): Hahn-Jordan theorem (1948, posth.) (L8)

Otto HÖLDER (1859-1937) in 1884: Hölder's inequality (L9)

Kiyosi ITÔ (1915-2008) in 1944: Itô integral, Itô isometry (L26); Itô's lemma (L27, L28)

Camille JORDAN (1838-1922) in 1881: Finite variation, FV; Hahn-Jordan theorem (L8)

Mark KAC (1914-1984) in 1950: Feynman-Kac formula (L28)

Shizuo KAKUTANI (1911-2004) in 1943: infinite product measures (L9)

Alexander Yakovlevich KHINCHIN (1894-1956) in 1929: WLLN (L12); Lévy-Khinchin formula in 1937 (L24)

Andrei Nikolaievich KOLMOGOROV (1903-1987) in 1933: *Grundbegriffe der Wahrscheinlichkeitsrechnung* – axiomatization of probability theory using measure theory; Zero-One Law (L13); Strong Law of Large Numbers (L14); conditional expectation (L15); Daniell-Kolmogorov Theorem (L17)

P. S. de LAPLACE (1749-1827): *Théorie Analytique des Probabilités*, 1812.

Henri LEBESGUE (1875-1941), in 1902 thesis: Lebesgue measure (L4); *Leçons sur l'intégration*, 1904/1928 (L6, L7)

Paul LÉVY (1886-1971): continuity theorem for CFs in 1925; Lévy metric in 1937 (L11); Lévy processes, Lévy-Khintchine formula in 1937 (L24, L25); quadratic variation of BM in 1948 (L22); arc-sine law for BM in 1948 (L28)

J. W. LINDEBERG (1876-1932) in 1922: CLT (L12)

J. E. LITTLEWOOD (1885-1977) in 1944: Littlewood's three principles (L9)

Filip LUNDBERG (1876-1965) in 1903: Poisson process (collective risk) (L23)

N. N. LUZIN (Lusin) (1883-1950) in 1912: Luzin's theorem (L9)

Paul-André MEYER (1934-2003): general theory of (stochastic) processes; stochastic integration, 1960s (Chs. III, IV); semi-martingales in 1976 (L30).

Hermann MINKOWSKI (1864-1909) in 1896: Minkowski's inequality (L6)

Abraham de MOIVRE (1667-1754): normal distribution in 1733; CLT in

1738 (L12)

Otto NIKODYM (1887-1974) in 1930: Radon-Nikodym theorem (general case) (L7)

Alexander A. NOVIKOV (1950-) in 1971: Novikov's condition (L28)

Blaise PASCAL (1623-1662) in 1654: Fermat-Pascal correspondence (L10)

S. D. POISSON (1781-1840) in 1837: Poisson distribution (L23)

Johann RADON (1887-1956) in 1913: Radon-Nikodym theorem (Euclidean case) (L7)

F. RIESZ (1880-1956) in 1907: Riesz-Fischer theorem (L6)

H. A. SCHWARZ (1843-1921) in 1885: Cauchy-Schwarz inequality (L9)

Thomas STIELTJES (1856-1894) in 1894/95: Stieltjes integrals (L8)

Giuseppe VITALI (1875-1932) in 1905: example of a non-measurable set (L4)

Norbert WIENER (1894-1964) in 1923: Wiener process (L20-22)

Ernst ZERMELO (1871-1953) in 1904: Axiom of Choice, AC (L4)

Max ZORN (1906-1993) in 1935: Zorn's Lemma (L4)