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Titolo	Adventure Diffusion : From Meandering Molecules to the Spreading of Plants, Humans, and Ideas / / by Gero Vogl
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ISBN	3-030-04681-8
Edizione	[1st ed. 2019.]
Descrizione fisica	1 online resource (162 pages)
Disciplina	530.415
Soggetti	Statistical physics System theory Computational complexity Dynamical systems Social sciences—Data processing Social sciences—Computer programs Emigration and immigration Statistical Physics and Dynamical Systems Complex Systems Complexity Computational Social Sciences Migration
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Laws of diffusion and how they were found by unconventionally acting and thinking scientists (Brownian motion, Fourier’s theory of heat, Fick’ s laws, Einstein-Smoluchowski’s random walk, Perrin’s experiments) -- Invasion of exotic plants (chestnut leaf miner moth, ragweed) -- Wave of advance (Fisher, Luther) -- Neolithic migration (Eurasia, Americas) -- Spread of languages (Indo-European in the past, endangered languages of today) -- Spread of diseases -- Spread of innovations.
Sommario/riassunto	This easy-to read book looks at the many ways in which diffusion bears on processes that involve dispersion, starting from the Brownian motion of molecules, covering the invasion of exotic plants, migration

of populations, epidemics, and extending to the spreading of languages and ideas. Recently, there has been a growing interest in understanding migrations, diffusion and spreading outside the “hard” natural sciences of physics and chemistry, for example the spreading of plants introduced as a result of globalization. Another fascinating story is that of human migration in the distant past, i.e. the immigration of our ancestors who brought agriculture from the Near East, or the fast spread of the Palaeo-Indians into the Americas after the end of the Ice Age. Likewise, the spread of languages in the past, and even more so the current spread and retreat of languages will be described here in terms of diffusion. By understanding these principles, there is hope that some of the less common languages that are threatened by globalization can be saved. Another important implication discussed by the author concerns the outbreak of epidemics; these may be mitigated if we understand their spreading mechanism. Last but not least the spreading of ideas and innovations, a process which changes the world sometimes faster than we wish, can also be usefully described in this picture.