1. Record Nr. UNINA9910851982503321 Autore Aftalion Amandine Titolo Be a Champion: 40 Facts You Didn't Know About Sports and Science // by Amandine Aftalion Cham:,: Springer Nature Switzerland:,: Imprint: Copernicus,, 2024 Pubbl/distr/stampa **ISBN** 3-031-54082-4 Edizione [1st ed. 2024.] Descrizione fisica 1 online resource (184 pages) Copernicus Books, Sparking Curiosity and Explaining the World, , Collana 2731-8990 510 Disciplina Soggetti Mathematics Sports sciences Mathematics in Popular Science Sport Science **Esports** Llibres electrònics Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Preface -- 1. Running -- 2. Throwing -- 3. Balls -- 4. Water, Wind and Nota di contenuto Cold -- 5. Rotating -- 6. Counting. Why do you lean in a bend? Why does a sprinter slow down before the Sommario/riassunto finish line? Why do golf balls have dimples? Why do you swim better slightly underwater? Why, on a bike, the faster you go, the more stable you are? Why shouldn't you rely on doping tests too much? Is there a law of evolution of records? These are some of the 40 questions that Amandine Aftalion answers in this book using simple physics and mathematics, and some humor. Not only will it allow you to improve yourself in sports, but it will also give way to understanding how champions do. An easy book to read and the must to have if you are a sports addict or if you watch sports on TV and ask yourself "why?". Amandine Aftalion is a French mathematician. She is a CNRS senior scientist and graduated from École normale supérieure in Paris. She has

> given talks all over the world, as a specialist of models coming from low temperature physics. She has written a book on vortices in Bose– Einstein condensates. More recently, she has used energy minimization

to study an optimal control problem coming from human energy: optimizing running. She has written papers on sports aimed at coaches. Part of her latest results have inspired the first chapter of this book. She is the producer and director of a French YouTube channel for the popularization of mathematics, Videodimath, elected as one of the 5 best French YouTube channels for popular mathematics.