

0. Tuning-in (... *not dropping out* ...) and getting into the groove

No - let's not (yet) talk about the rhythm-“groove”. This short pre-chapter is not supposed to correct the tuning of the guitar but to tune the reader to the called-for reading-groove ... tuning-in to electromechanical systems theory, to science – but also to fantastical blurbs.

Physics of the guitar – that is a wide subject (Too Far Afield, even?). There are non-linear differential equations, time-variant systems, non-homogeneous anisotropic materials, spinodal decompositions, diverging magnetic fields, and dispersive continuum-waves. Cast under a proliferating cloud of wafting catch phrases that could be not more dopey, bogus, fallacious and plain wrong. Undermined by self-proclaimed gurus who spam their unproven assumptions with steady regularity into magazine columns. Outshone by the infallible splendor of science that however prefers to bestow its affection onto those more noble instruments, preferring to ponder the violin, the pianoforte, and the church organ – rather than the armamentarium of Mr. James Marshall H. A science that will fastidiously check the spelling of the name of famous Lord John Rayleigh in order to at all cost avoid any mix-up with Sir Walter Raleigh, but is unable to distinguish between Jimi and Jimmy, just as it fails to get right the difference between rock and pop*.

So ... yet another book about the electric guitar! That thing that the genius Segovia sought to deny the designation “musical instrument”. That guitar “wired for sound”, somehow operating with electrical current but still allegedly needing to “resonate” down into the very last wood-fiber after each plucking of a string. This here is not going to be easy – not for the author, not for the reader. Well then: if one does make an assertion regarding the effect of a shielding pickup cover, then supporting it with good reasons should be mandatory. Three purposeful reasons are: the physical/mathematical model, the results of measurements, and a correspondence of the two. However, a physical/mathematical model requires a certain basic knowledge in physics and mathematics – in fact that's an enormous understatement because in order to comprehend a coupling of modes, a good deal of specialist knowledge needs to be present. Therefore this book “Physics of the Electric Guitar” has not turned out as a book that will advise the musician which guitar to buy, but it is a documentation of years of research work. Still, since the author is not your regular theory-dweeb, either, but a practicing guitarist, the odd thought has made it directly from the left-hand part of the brain onto the paper, and remains comprehensible without any grand education in math or physics. Or so the author hopes, anyway! At least, these thoughts should not be any more cloudy than the allegation that alder would result in both fat and subtle bass, and in both accentuated and mushy articulation [guitar literature].

So: if you are not that much (or not at all) interested in formal-analytical description: do turn the page(s) ... more practically oriented passages and simplifying summaries always lie ahead. It is the guitar that remains the topic of this book, and not theory for its own sake. For the following pages, a few paragraphs from Chapters 7 and 8 shall be pulled ahead, to tune-in without a lot of math. After that, the (science-) band begins to play ... we're gonna get down to business.

* Memory hook for the gig: rock first, pop later!