



LEsprit Des Monarques Philosophes

By -

RareBooksClub. Paperback. Book Condition: New. This item is printed on demand. Paperback. 42 pages. Original publisher: Adelphi, MD : Army Research Laboratory, 2010 OCLC Number: (OCoLC)574526657 Subject: Electronic circuits. Excerpt: . . . where the voltage drops are given by $t \, dl \, 1 \, V \, L \, V \, RI \, V \, IdL \, R \, C \, dt \, C \, 0$ This equation can be solved easily; however, from a numerical standpoint it has the problem that it has an integral in it, which means it is not a differential equation. Taking the derivative if equation 3 corrects this: $2 \, dV \, d \, I \, dl \, 1 \, 0 \, L \, R \, I \, 2 \, dt \, C \, dt$ Although this is easily solved analytically, it is not first order and hence is problematic for numerical solution. A new choice of state variables fixes this: since the current is related to the charge on the capacitor by $dQ \, I \, dt$ we can write the following system of equations: $dQ \, I \, dt \, dl \, 1 \, R \, 1 \, V \, I \, Q \, 0 \, dt \, L \, L \, LCQ$ We now have a state vector x to describe the circuit, and a vector function $II \, F \, x \, 1 \, R \, 1 \, V \, I \, Q \, 0 \, L \, L \, LC$ which a simulator can accept....



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