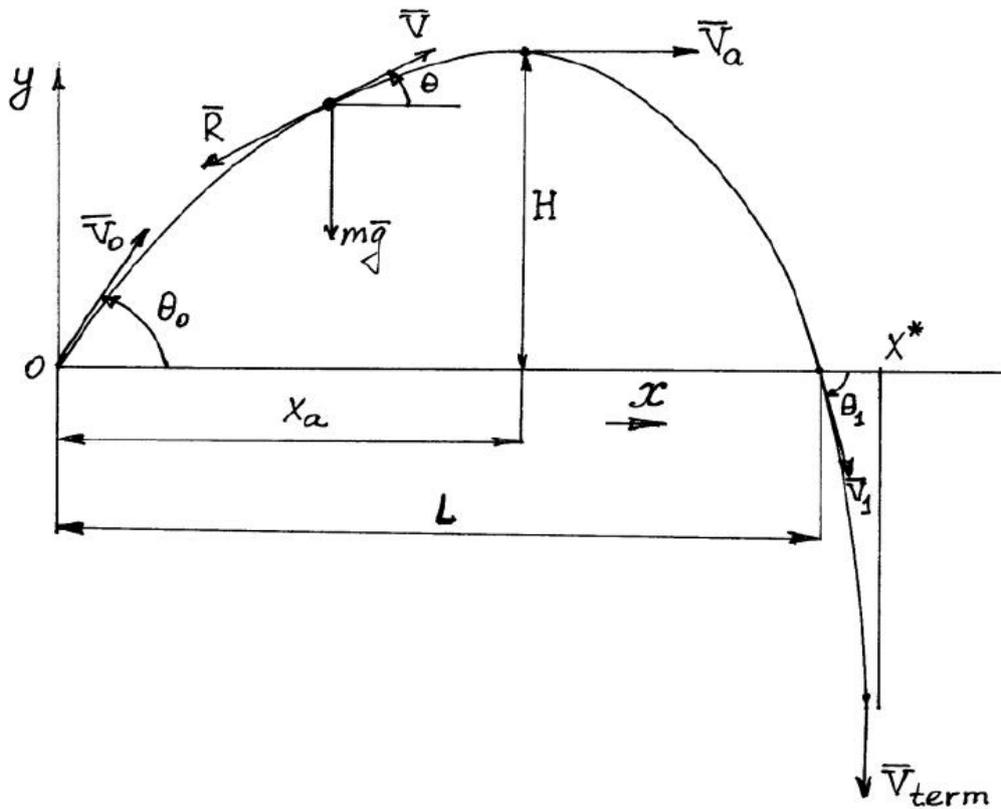


Approximate Analytical Description of the Projectile Motion with a Quadratic Drag Force

By Peter Chudinov*



$V_0 = 40 \text{ m/s}$, $\theta_0 = 45^\circ$, $k = 0.000625 \text{ s}^2/\text{m}^2$, $g = 9.81 \text{ m/s}^2$.

Table 2. Comparison of Numerical and Analytical Calculations

Parameter	Analytical value	Numerical value	Error (%)
H (m)	30.1	29.8	1.1
T (s)	4.96	4.91	1.0
V_a (m/s)	19.3	19.3	0
L (m)	95.7	96.1	-0.4
t_a (s)	2.30	2.31	-0.4
x_a (m)	53.7	53.0	1.3
θ_1 (degree)	-58.6°	-57.3°	2.2
V_1 (m/s)	26.0	25.5	2.0