Aplikace matematiky

Summaries of Papers Appearing in this Issue

Aplikace matematiky, Vol. 18 (1973), No. 4, (304a),(304b)

Persistent URL: http://dml.cz/dmlcz/103481

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(These summaries may be reproduced)

VLADIMÍR MATAS, Praha: *On non-existence of periodic solutions of an important differential equation.* Apl. mat. 18 (1973), 213—226. (Original paper.)

The equations of variation with respect to the straight-line equilibrium points L_1, L_2, L_3 of the elliptic three-dimensional restricted problem of three bodies are equivalent to a system of two differential equations of the second order and one Hill's equation. In the paper presented here, this Hill's equation is studied and a proof is given that this differential equation has no nontrivial periodic solution.

OTAKAR JAROCH, Praha: *Asymptotické vzorce Hilbova typu pro ortogonální exponenciální mnohočleny.* (Асимптотические формулы типа Хильба для ортогональных экспоненциальных многочленов.) Apl. mat. 18 (1973), 227—237. (Оригинальная статья.)

Даются две асимптотические формулы типа Хильба, которыми описывается поведение ортогональных экспоненциальных многочленов

$$\varphi_n(t) = b_{n1}e^{-t} + b_{n2}e^{-2t} + \ldots + b_{nn}e^{-nt}$$

для весьма малых и весьма больших значений t при помощи функций Бессела $J_0(2m\theta)$ и $J_1(2n\theta)$. Значения $\varphi_1(t)$, $\varphi_5(t)$ и $\varphi_{15}(t)$ были рассчитаны для некоторых t чтобы проиллюстрировать применение полученных формул. Коэффициенты b_{nk} тоже рассчитаны для $n = 1 \div 20$ и таблица их найдется в статье.

KATUHIKO MORITA, OSAMU SATŌ, Kanazawa: *A method of constructing general contact tangential charts.* Apl. mat. 18 (1973), 238—248. (Original paper.)

Let F_{123} be a real function of three real variables t_1, t_2 and t_3. We give a method of constructing the contact tangential chart of $F_{123} = 0$ by the enveloping method. Given the parametric equations of (t_1)- and (t_2)-curves, we can obtain the parametric equation of (t_3)-curves, by classical differential-geometric method. Some examples are also given. A special case of the general contact tangential charts, consisting of one curvilinear scale and two families of envelopes is also studied. Finally, contact tangential charts of four variables or more are researched.

KAREL MIŠOŇ, Praha: *Realisation of rendezvous by the transfer orbit which is tangential to the original and terminal orbits.* Apl. mat. 18 (1973), 249—267. (Original paper.)

The rendezvous realised by the cotangential transfer between two prescribed flightpaths is studied. General formulas based on the two bodies problem are in the conclusion applied to a numerical example calculated for the Earth gravitational field.

DIETRICH STOYAN, Freiberg: *Monotonieeigenschaften einliniger Bedienungssysteme mit exponentiellen Bedienungszeiten.* Apl. mat. 18 (1973), 268—279. (Originalartikel.)

Für die Systeme $G/M/1\,(s)$ und $G/M/1$ wird das Problem untersucht, inwieweit bestimmte Systemcharakteristiken „monoton" vom Input abhängig sind. Es wird gezeigt, daß sich bei einem Input mit „kleinen" Abständen zwischen den Forderungenankünften „große" Verluste im Fall $s < \infty$ und „große" Schlangenlängen für $s = \infty$ ergeben und entsprechend bei „großen" Abständen „kleine" Verluste und Schlangenlängen.

KAREL ČULÍK, Praha: *Syntactical definitions of program and flow diagram.* Apl. mat. 18 (1973), 280—301. (Original paper.)

The program is defined syntactically as an ordered finite set of labelled commands which are certain strings over a finite alphabet. The labelled branch of a program is a finite sequence of labelled commands of the program, which represents a possible order of commands in a completed computation. Several syntactical requirements, motivated by the computation process, are added in the strong definition of the program. The flow diagram of a program is introduced as an oriented graph with labelled vertices and edges. An algorithm of synthesis of a program from a flow-diagram is presented. Non-labelled and operational branches are introduced for programs and also for flow diagrams. The necessary and sufficient conditions are presented for two programs to have the same set of labelled and non-labelled branches, which always is a regular event. A survey on all possible flow diagrams is given algebraically by a graph factorization, where the factor r-graph is connected and acyclic with a single input vertex while the corresponding subgraphs are strongly connected.