

# Yozgi matematika maktabi onlayn darsi o'tkazildi

O'zR FA Matematika instituti olimlari tashabbusi bilan talabalar va yosh olimlar uchun 2020-yil 16-iyulida "O'yinlar nazariyasiga kirish" mavzusida Yozgi matematika maktabi onlayn darsi tashkil etildi.

The slide features a central circle labeled 'DG's' with four arrows pointing towards it from the top, bottom, left, and right. Four colored boxes contain the following text:

- Game Theory:** Fleming, Friedman, Petrosyan, Petrov, Varayya&Lin, Elliot&Kalton, Azamov  
 $\dot{z} = f(z, u, v), \quad u \in P, \quad v \in Q, \quad z(T) \in M$   
 $0 \leq t \leq T$   
Approximations
- Variational calculus:** Isaacs, Berkovitz, Blackwell, Hagedorn, ...  
**Control theory:** Pontryagin, Krasovskii&Co, Pshenichniy, Satimov, Leytman, ...  
 $\dot{z} = Cz - u + v, \quad u \in P, \quad v \in Q, \quad z(T) \in M$   
 $0 \leq t \leq ?$
- Elementary DG's:** "Lion&Man", "Life line", "Kozzaks and Robbers", "Dame in he lake", "Rat in the corner", ...  
 $\dot{x} = u, |u| \leq \rho, \text{ or/and } \|u(\cdot)\|_B \leq \alpha$   
 $\dot{y} = v, |v| \leq \rho, \text{ or/and } \|v(\cdot)\|_B \leq \beta$

A video feed of Abdulla Azamov is visible in the top right corner of the slide.

Unda respublika oliy talim muassasalari professor-o` qituvchilari hamda iqtidorli talabalar va Matematika instituti jamoasi ishtirok etdi. Bugungi onlayn darsda akademik Abdulla A'zamov "Differensial o`yinlar uchun uch yondashuv: elementar yondashuv" mavzusida ma'ruba qildi. Onlayn dars davomida sohaga oid zamonaviy muammolar muhokama qilindi va o'zaro tajriba almashildi.

## Некоторые результаты и нерешенные задачи

L.Petrosyan:  $\mathcal{P}$  moves in the given convex compact set  $A \subset \mathbb{R}^d$  and applies  $\Pi$ -strategy,  $\mathcal{Q}$  moves on the border  $B = \partial A$ , maximal speeds equal.

Result (A.Azamov, A. Kuchkarov, unpublished): if  $d = 2$ , then

If  $B$  is not smooth or smooth but there exist a point  $b \in B$  such that in a neighborhood of  $b$  a line  $B$  is a graphic of a function  $y = f(x)$ , that  $\int f(x)dx$  diverges then  $\mathcal{Q}$  wins, otherwise  $\mathcal{P}$  wins.

Problem: What about the case  $d > 2$ ?



