



Объединенный институт ядерных исследований  
ЛАБОРАТОРИЯ ТЕОРЕТИЧЕСКОЙ ФИЗИКИ  
им. Н. Н. Боголюбова

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Семинар  
"ТЕОРИЯ АДРОННОГО ВЕЩЕСТВА ПРИ ЭКСТРЕМАЛЬНЫХ УСЛОВИЯХ"

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Руководители: Э.-М. Илгенфритц и О. В. Теряев

Семинар состоится  
в понедельник, 28 сентября в 14.00  
в аудитории им. Д. И. Блохинцева (4 этаж)

E.-M. Ilgenfritz (JINR BLTP), V.K. Mitrjushkin (JINR BLTP),  
I.L. Bogolubsky (JINR LIT), M. Mueller-Preussker (HU Berlin,  
Germany), V.G. Bornyakov (ИЯЭ Протвино, ИТЭП Moscow and FEFU  
Vladivostok) and A. Sternbeck (FSU Jena, Germany)

## Lattice study of gluon and ghost propagators in Landau gauge QCD

*(The talk will be given in connection with the submission of a cycle of publications of the group of authors to the competition for the JINR award 2015)*

I will give an overview over intentions and guiding ideas underlying the studies of (gauge dependent) propagators in lattice QCD:

- confinement criteria formulated in terms of propagators
- control of assumptions underlying continuum approaches to non-perturbative QCD like Schwinger-Dyson and FRG
- providing input to continuum approaches to non-perturbative QCD in order to overcome limitations of lattice QCD (e.g. non-vanishing baryonic density)
- problems and ambiguities preventing a unique fixing of the requested gauge
- lessons from earlier JINR-Berlin research in the 90-s in the field of lattice QED
- change of the infrared paradigm from the “scaling solution” to the “decoupling solutions”
- mapping the non-uniqueness of gauge fixing to the family of ghost boundary conditions specifying the decoupling solutions.