

Institut Ruđer Bošković  
ZAVOD ZA TEORIJSKU FIZIKU  
Bijenička c. 54  
ZAGREB, HRVATSKA

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## SEMINAR ZAVODA ZA TEORIJSKU FIZIKU

(Zajednički seminari Zavoda za teorijsku fiziku,  
Zavoda za eksperimentalnu fiziku IRB-a i Fizičkog odsjeka PMF-a)

# Dark Matter Pearl able to make Heat by Neutrons and help Supernovae explode

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Datum: srijeda, 3. lipnja 2015.

Vrijeme : **14:00 sati c.t.**

Mjesto: IRB, dvorana I krilo

### **Abstract:**

We present an idea about how dark matter could appear - a bit complicated though - in pure Standard model, only modified by adding to it a rule - called Multiple Point Principle - for finetuning the coupling constants (partly). With this fine tuning principle Colin Froggatt and I once successfully PREDicted the Higgs mass ( before Higgs were found!). In our model dark matter consists of pearl size extremely heavy pieces of a new vacuum filled with material much like the one in white dwarfs kept together by surface tension associated with the border of the two types of vacuum. The weight of the pearl is about 100000 tons. Such a pearl can get heated up - a new source of energy! - by being exposed to neutrons, about 10 MeV per neutron. This property makes it also a candidate for playing a role in supernova explosions. Actually we postdict the time nce between ther being TWO strong neutrino bursts which were 4 hours and 45 minutes, we got though 14 hours but with our accuracy that is the same.

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