

**WYKŁAD WYDZIAŁOWY**  
w ramach seminarium  
**ARYTMETYCZNA GEOMETRIA  
ALGEBRAICZNA**

(organizatorzy: Grzegorz Banaszak, Piotr Krasoń)

Czwartek **13 czerwca 2019**, godz. **16:00**, sala **212**  
**Wydział Matematyczno-Fizyczny Uniwersytetu  
Szczecińskiego** ul. Wielkopolska 15, 70-451 Szczecin

**Prof. Christopher Deninger**

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***Dynamical systems for number fields***

**Abstract:** In the lecture we explain a natural construction of infinite dimensional dynamical systems attached to rings of integers in number fields. The prime ideals  $\mathfrak{p}$  correspond to compact packets of closed orbits each of length  $\log N(\mathfrak{p})$  where  $N(\mathfrak{p})$  is the norm of  $\mathfrak{p}$ . There are no other closed orbits. Hence a Ruelle type zeta function of the dynamical system is the Dedekind zeta function of the number field. The topology of the dynamical system is complicated and we discuss what is known about it and in particular whether it determines the number field. The entire construction can be generalized to higher dimensional arithmetic schemes.