Nagroda Instytutu Matematycznego PAN
za wybitne osiągnięcia naukowe
w zakresie matematyki

Serdecznie zapraszamy na uroczyste wręczenie Nagrody Naukowej IM PAN,

które odbędzie się **dnia 21 czerwca 2018 r. o godzinie 16.30 w sali 409.**

Tegorocznym laureatem została **prof. dr hab. AGATA SMOKTUNOWICZ,**

za wybitne osiągnięcia w algebrze.

O godzinie 17.00 w sali 403 Laureatka Nagrody wygłosi referat:

Nil rings and braces

Abstract: *In this talk we will consider applications of noncommutative ring theory in other research areas, namely geometry, braces, skew braces and set-theoretic solutions of the quantum Yang-Baxter equation. Circa 2007, Rump presented some surprising connections between nil and nilpotent rings (more generally, Jacobson radical rings) and solutions of the quantum Young-Baxter equation. Rump introduced a structure which he called "a brace", to describe all involutive, non-degenerate set-theoretic solutions of the quantum Yang-Baxter equation. In particular, he showed that Jacobson radical rings are in one-to-one correspondence with two-sided braces, and that every Jacobson radical ring yields a solution to the Young-Baxter equation. Because of their similarity to rings, braces quickly captured the attention of algebraists.*
It turns out that braces can be investigated using ring theory methods. One might say that ring theory is enjoying a 'second youth' because of braces! We will look at some new and older results on Jacobson radical rings and nil rings and the corresponding results in brace theory. Recall that a ring is nil if every element to some power is zero. We also mention applications of ring theory in geometry to investigate superpotential algebras, and consider some open questions related to braces.