

Department of Mathematics  
City University of Hong Kong

## Colloquium

Organised by Prof. P. G. Ciarlet and Prof. F. Cucker

### R. William Gosper and his Identities

by

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**Abstract** : I will say something about Bill Gosper and his work. I will present some of the identities he discovered and where they come from and the mathematical concepts behind them. The left-hand sides of some sample formulas are :

$$\sum_{n=1}^{\infty} \frac{1}{n^2} \cos\left(\frac{\pi}{n + \sqrt{n^2 + 1}}\right) = ??$$

and

$$1 + \sum_{n=1}^{\infty} (x^{1/2} - c)(x^{1/4} - c) \dots (x^{2^{-n}} - c) = ??$$

for  $|1 - c| < 1, x \notin (-\infty, 0)$ . If interested try to fill in the ?? in the right-hand sides. The second identity is not very difficult to prove but the first is harder.

**Date** : 3 February 2010 (Wednesday)  
**Time** : 4:30pm - 5:30pm  
**Venue** : Room B6605 (College Conference Room)  
Blue Zone, Level 6  
Academic Building  
City University of Hong Kong

(Tea, coffee and cookies will be provided at the Faculty Conference Room in B6605 before the colloquium from 4:00 to 4:30pm. Please come and join us.)

**\*\* All interested are welcome \*\***

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