

ISMTF Conference Program

Calculators/Laptops will be provided for your use during sessions

Friday		
7:45	Hilton Pick-up	
8:30	Registration	
9:00	10:00	An Overview of the TI-Nspire
10:15	11:15	An Introduction to the TI-Nspire CAS Calculator
		Jim + Peter
11:15	11:45 Break	
11:45	12:45	Analytic graphs on the TI-Nspire
		Jim
13:00	14:00 Lunch	
14:00	15:00	New ways to create and to share resources
		Douglas
15:00	16:00	Geometry on the TI-Nspire
		Jim
16:00	16:30 Coffee	
16:30	17:45	Playing with Polynomials
		Peter
17:50	Transport back to Hilton	

Saturday		
8:00	Hilton pick-up	
8:30	9:30	Data, Statistics & Spreadsheets on the TI-Nspire
		Jim
9:45	10:45	Promoting Understanding of Mathematical Functions with TI-Nspire CAS (I)
		Peter
10:45	11:15 Break	
11:15	12:15	Having fun with data and images
		Douglas
12:30	13:30 Lunch	
13:30	15:45	Promoting Understanding of Mathematical Functions with TI-Nspire CAS (II)
		Peter
		and Amazing Simultaneous Equations
15:45	16:15 Break	
16:15	17:00	Challenging situations where technology can really help: Autograph workshop
		Douglas
17:20	Transport back to Hilton	
19:30	Transport from Hilton to Restaurant	
20:00	23:00	Conference dinner
23:00	Transport back to Hilton	

Sunday		
8:00	Hilton pick-up	
8:30	9:30	Designing Tasks in CAS-Active Learning Environments
		Peter
10:00	11:30	The use of technology in examination papers and IA work and conclusion
		Jim, Tim, Peter, Peter, Ibrahim
12:00	Transport to Hilton	

Sessions Brief Descriptions

An Overview of the TI-Nspire

It's time to catch up to your students! They're the iPod generation – are we a little too comfortable with our boom boxes? The changes brought about with the introduction of the *Nspire* truly mark a paradigm shift. Come play with the *Nspire*. Participants will be introduced to the *Nspire* system – the handheld keypad, Apps, menus, and compatibility with software. The differences between the *Nspire* and *Nspire CAS* will be explored.

An Introduction to the TI-Nspire CAS Calculator

In this session, participants are introduced to some of the features of the TI-Nspire CAS. The Calculator, Graphs & Geometry, Lists & Spreadsheet and Data & Statistics applications will be briefly introduced. No previous experience with the device is necessary.

Analytic graphs/Sliders on the TI-Nspire

So you think you know how to dance (...with graphs on a GDC)? Come and do more than tip toe around technology. You (and your students) will have a chance to explore mathematical relations from a completely different approach. See how technology is changing the delivery of mathematics education! Sliders are a simple menu click away on the *Nspire* keypad. With them we'll vary all the parameters in your graphs to explore their effect.

Geometry on the TI-Nspire

The geometry features are simply quite amazing! Designed by the team that produced *Cabri*, the Plane Geometry App is fun to use interactively with the Analytic Geometry and Spreadsheet Apps. *Nspire CAS* handhelds will be provided for your use.

Data & Statistics/Spreadsheets on the TI-Nspire

The last of the Apps to become available on the *Nspire*, the Data & Statistics App quickly demonstrates the power of multiple representations. Data analysis on the fly! The Spreadsheet App is a major extension to the use of lists on a GDC. Using this feature of the *Nspire* will be as familiar as using *Excel*. As a matter of fact, data can be imported from an *Excel* file.

Promoting Understanding of Mathematical Functions with TI-Nspire CAS

In this session, participants will attempt key parts of some extended tasks that are designed to improve students' understanding of mathematical functions. No previous experience with the device is necessary.

Designing Tasks in CAS-Active Learning Environments

In this session, participants will attempt a task designed for a CAS-active learning environment. Approaches in designing such tasks will be identified and discussed. No previous experience with the device is necessary.

Playing with Polynomials

In this session, participants will attempt some tasks that illustrate some interesting properties of polynomial functions. Participants will be able to use either a TI-Nspire calculator or a TI-Nspire CAS calculator to solve these tasks. Some experience with either device is desirable. TI-Nspire and TI-Nspire CAS calculators will be provided.

Amazing Simultaneous Equations

In this session, participants are asked to investigate the solution set of a number of systems of simultaneous linear equations in the variables x and y whose constants are linked by a variety of special relationships. Participants will be able to use either a TI-Nspire calculator or a TI-Nspire CAS calculator. Some experience with either device is desirable.

The use of technology in examination papers and IA work

With the approval in September 2008 of the use of the *N*spire (non-CAS) on IB examination papers 2 and 3, teachers now must know how to put the handheld in Press-to-Test (PTP) mode. Come find out. This session will also dwell on the important issue of *HOW* to answer examination questions and document IA work when using technology.

New ways to create and to share resources

Having worked on the new ATM “MTi” (Mathematics Teaching Interactive) in July, Douglas will hopefully convince everyone that paper-based resources are not really appropriate for anything that moves! We will look at how easy it is to record activities using ‘Jing’ - a tool that I can see being used all over the place, eg for setting homework, answering “how do you do” emails, saving screen-shots, and creating short tutorials or revision material. We will then look at creating a YouTube channel for all your work, and uploading to share - either privately, or with the world. YouTube banned? No worries - there are plenty of ways round that.

Having fun with data and images

Douglas has been collecting data and images for use in mathematics teaching. The data includes some great files on baby statistics, weights of patients and sports data. The images are now arranged conveniently into appropriate categories: arches, Circular, Parabolic, Polygons, Reflection and Spirals. Many have been found by scouring the Earth in GoogleMaps or FlashEarth. All have useful possibilities in mathematics lessons from Grades 8 to 12. MS Paint will be used to crop and edit the images; Excel will manipulate the data; Autograph will be used to throw some mathematics at them! The Data and Images files can all be downloaded from: www.tsm-resources.com/useful-files.html

Challenging situations where technology can really help: Autograph workshop

There are lots of situations where technology can make all the difference. This hands-on session will look at some new ways to investigate some old topics, including: Why do shot-putters or javelin thrower project at around 30 degrees; why is the normal distribution so prevalent; what is actually going on with “completing the square”; how to represent two aeroplanes passing in 3D; can you gain an advantage by heading up in a gust (that’s sailing, with vectors!); having fun with differential equations; what’s really going on when you solve a quadratic with complex roots? ... etc!