Numero

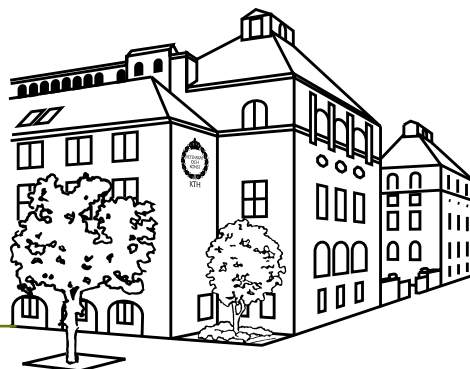*Veckobladet om forskning, undervisning och administration på Skolan för datavetenskap och kommunikation*

Numero nr 24

30 augusti 2007 • Årgång 37

**INVIGNING
QUOTTIS PÅ KTH
FREDAGEN DEN 7 SEPT. KL 14**

Quottis på KTH, KTHs tillfälliga barnpassning för barn 6-36 månader, invigs fredagen den 7 sept.

Missa inte att vara med när en ny, spännande verksamhet startar på KTH!

Ditt/dina barn/barnbarn är självklart välkomna med.

Läs mer i inbjudan på:
http://www.kth.se/internt/projekt/future_faculty/quottis_invit.pdf

Vi ser fram emot att träffa dig på invigningen och hoppas att du sprider detta till dina kollegor. Alla anställda - oavsett om de har småbarn eller inte - är välkomna!

Anmäl er direkt till Anna Almlöw, almlow@kth.se
790 96 21, senast den 3 september.

The grand opening of KTH Quottis, the new temporary day nursery for children 6-36 months at KTH, will take place in Friday September 7th at 2 p.m.

Do not miss this opportunity to be introduced to a new exiting department at KTH!

Your child/children/grandchildren are of course welcome too!

Invitation is found at:
http://www.kth.se/internt/projekt/future_faculty/quottis_invit.pdf

RSVP to Anna Almlöw, almlow@kth.se
790 96 21, latest September 3.

Margareta Norell Bergendahl

Var med på lådbilsrace 31 augusti

Läs mer på nästa sida…

Välmommen på Qi-gong:
Måndagar kl 9.00 och Fredagar kl 11.15

Läs mer på sidan 5…

Minisymposium on Scientific Computing at KTH

on the occasion of the 10 year celebration of the Master Programme

The Scientific Computing Programme was among the first Master Programme to start at KTH in 1997. It was also among the first to start in Europe and up to now about 200 students from 50 different countries have graduated.

Nowadays Scientific Computing (or Computational Science) is given by many universities all over the world. One reason for its popularity is the demand from industry of persons who are educated to perform efficient and large scale computer simulations based on mathematical models of processes in science and engineering. Examples of areas that have been much influenced by this way of attacking problems is fluid dynamics, electromagnetics and material science.

On Monday September 3rd 10-12 in room (venue announced later on) at KTH there will be a Minisymposium to celebrate this first mile stone in the devellopment of the Scientific Computing Master Programme.

All interested students, teachers and other persons are invited to participate. To plan the amount of coffee and danish to be served in the break, please send an e-mail to edsberg@csc.kth.se and say that you will take part.

PROGRAM for Minisymposium

10.15 Welcome from Dr Ingrid Melinder, Dean at the CSC-school

10.25 SciComp Master Programmes in Europe, Dr Lennart Edsberg Director of the Programme

10.45 Research in SciComp, Prof Jesper Oppelstrup,

11.10 Coffe break

11.30 Impressions from earlier Master students

12.00 The end

Seminarielänkar

AlbaNova
http://www.albanova.se/aktuellt/

Avdelningen för teknik- och vetenskapshistoria
www.teknikhistoria.se

Bråket
http://www.math.kth.se/braaket.html

CIAM - Center for Industrial and Applied Mathematics
http://www.ciam.kth.se/seminars.html

Var med på lådbilsrace 31 augusti

D-teknologerna uppskattar när vi deltar med ett lärarlag i deras Lådbilsrace. Det äger rum fredagen den 31 augusti. Jag har lovat att undersöka om det finns intresse hos några av skolans lärare eller doktorander att delta. Jag har förståelse för att du kan tycka att det blir mycket med mottagning och race. Jag prioriterar lärarmottagningen, men ...

Är det några som är vill delta i Lådbilsracet i år? Det behövs ca 5 personer för att bygga en bil och att delta under själva racet. Jag kan vara en av dem. Vi har rutin och också material från tidigare år, som kan återanvändas. Vi kan bygga själva bilen tidigare, men teknologerna börjar bygga sina kl 9 på fredagen och själva racet börjar kl 14 och tar ca 2 timmar.

Anmäl intresse till mig så snart som möjligt dock senast tisdag den 28 augusti kl 11. Då sitter jag i pausrummet på plan 4, LV3 och bjuder intresserade på en lunchmacka.

Det är kul och studenterna gillar kontakten!

Ingrid

Utlysning

Nu är det dags för nästa omgång av Innovationsbrons verifieringsprogram FOKUS Verifiering och VINNOVAs verifieringsprogram VINN Verifiering.

Sprid gärna detta till dina kollegor!

Medel för verifiering av kommersialiserbar forskning!

Innovationsbron Stockholms finansieringsprogram "FOKUS Verifiering" och VINNOVAs "VINN Verifiering" finansierar tidiga stadier i utvecklingen av kommersiellt intressanta forskningsresultat och uppfinningar.

Sökande kan få upp till 200 000 kr från Innovationsbron och upp till 2 miljoner från VINNOVA för att utvärdera och säkra potentiellt kommersiellt intressanta forskningsresultat och uppfinningar.

Sista ansökningsdatum för FOKUS Verifiering denna omgång är den 3 september. Nya tillfällen dyker sedan upp med några månaders mellanrum.

Sista ansökningsdatum för VINN Verifiering denna omgång är den 10 september. Ytterligare ett tillfälle kommer komma under hösten.

Vi på KTH Innovation hjälper er gärna med ansökningsprocessen och det efterföljande verifieringsarbetet. Gå in på www.kth.se/innovation så kan du läsa mer om programmet eller kontakta mig på notander@kth.se
08-790 9713 för mer information.

Med vänliga hälsningar
Gustav Notander

Seminarium

TCS-seminarium:
Generating Propagators for Finite Set Constraints
Christian Schulte, Department of Electronic, Computer, and Software Systems, KTH ICT

Monday September 10, 13:15, room 1537:
Constraint programming is a successful and widely used method for solving combinatorial optimization problems. An essential ingredient for any constraint programming system are propagators implementing constraints performing strong constraint propagation.

Ideally, programming propagators as implementations of constraints should be an entirely declarative specification process for a large class of constraints: a high-level declarative specification is automatically translated into an efficient propagator.

This talk introduces the use of existential monadic second-order logic as declarative specification language for finite set propagators. The approach taken is to automatically derive projection propagators (involving a single variable only) implementing constraints described by formulas. By this, we transfer the ideas of indexicals to finite set constraints while considerably increasing the level of abstraction available with indexicals. We show soundness and completeness of the derived propagators and present a runtime analysis, including techniques for efficiently executing projectors for n-ary constraints.

Joint work with:
* Guido Tack, Programming Systems Lab, Saarland U, Germany
* Gert Smolka, Programming Systems Lab, Saarland U, Germany

Per Austrin

Teaching Physics and Astronomy in the Early Years

Maria Kallery, Aristotle University of Thessaloniki, Greece

Time and Place: Klein Auditorium, Albanova, Thursday August 30th at 15.15

Abstract

Recent research suggests that during their early-years children begin to construct science concepts of increasing complexity. From the educational perspective, there is a growing realization that appropriate scientific work can and should begin in infant classes as science in the early-years is expected to contribute to the formation of a background which will lead to better understanding of difficult scientific concepts and scientific phenomena studied later in a more formal way.

To create quality teaching and learning opportunities for the young learners, science education in the early childhood should be in knowledgeable hands. Early-years teachers themselves need to have science knowledge and pedagogical skills as well as the ability to appropriately synthesize the two. However research has found that non-science-specialist teachers, in their work, face several problems related to different factors.

In this colloquium I will present reasons for exposing children to science early in life, the aims of early-years education and ways to approach it. I will review teachers' difficulties that have been identified by many years of research and I will present the work of our action research group composed of experienced early-years teachers and of a specialist in science. This group developed and implemented sequences of activities for the initiation of young children aged 4-6 into science. Finally I will present two of these sequences which concern concepts and phenomena of physics and astronomy and I will discuss their impact on children's learning and attitudes as well as on the teachers' knowledge and practices.

Tea and Coffee served before the lecture

The Colloquium Committee

Konferens

Strategiskt Jämställdhetsarbete Kunskap Dialog och Resultat

Det finns tre platser kvar på konferensen "Strategiskt Jämställdhetsarbete Kunskap, Dialog och Resultat", med deltagare från KTH, Vattenfall och Volvo AB. Konferensen ingår i forsknings- och utvecklingsprojektet "Kvinnor som maktresurs i förändrings- och innovationsprocesser". Syftet med konferensdagen är att förankra och fördjupa det utvecklingsarbete som bedrivs på Volvo AB, Vattenfall och KTH inom ramen för detta projekt. Under dagen kan du lära mer om forskning om ledarskap och kön samt delta i dialoger och erfarenhetsutbyten mellan Volvo AB, Vattenfall och KTH.

Projektet är ett samarbete mellan forskargruppen Fosfor vid KTH, KTH, Volvo Group och Vattenfall AB och finansieras av VINNOVA och Svenska ESF-rådet i Stockholm.

Tid: den 13 september 2007, klockan 10.00 -17.00

Plats: Volvo i Göteborg

Anmälan: Bindande anmälan med namn, postadress och e-postadress skickas till maktresurs@itm.kth. se Konferensen är gratis, lunch och dokumentation ingår.

Disputationer

Adaptivity for Stochastic and Partial Differential Equations with Applications to Phase Transformations

Respondent: Erik von Schwerin, Numerisk Analys

17 september, kl 13:00
Sal F3, Lindstedtsvägen 26

Opponent: Professor Desmond Higham, Univ of Strathclyde, Scotland

Handledare: Professor Anders Szepessy

Abstract
This work is concentrated on efforts to efficiently compute properties of systems, modelled by differential equations, involving multiple scales. Goal oriented adaptivity is the common approach to all the treated problems. Here the goal of a numerical computation is to approximate a functional of the solution to the differential equation and the numerical method is adapted to this task.

The thesis consists of four papers. The first three papers concern the convergence of adaptive algorithms for numerical solution of differential equations; based on a posteriori expansions of global errors in the sought functional, the discretisations used in a numerical solution of the differential equiation are adaptively refined. The fourth paper uses expansion of the adaptive modelling error to compute a stochastic differential equation for a phase-field by coarse-graining molecular dynamics.

An adaptive algorithm aims to minimise the number of degrees of freedom to make the error in the functional less than a given tolerance. The number of degrees of freedom provides the convergence rate of the adaptive algorithm as the tolerance tends to zero. Provided that the computational work is proportional to the degrees of freedom this gives an estimate of the efficiency of the algorithm.

The first paper treats approximation of functionals of solutions to second order elliptic partial differential equations in bounded domains of $\mathbb{R}^d$, using isoparametric d-linear quadrilateral finite elements. For an adaptive algorithm, an error expansion with computable leading order term is derived and used in a computable error density, which is proved to converge uniformly as the mesh size tends to zero. For each element an error indicator is defined by the computed error density multiplying the local mesh size to the power of $2 + d$. The adaptive algorithm is based on successive subdivisions of elements, where it uses the error indicators. It is proved, using the uniform convergence of the error density, that the algorithm either reduces the maximal error indicator with a factor or stops; if it stops, then the error is asymptotically bounded by the tolerance using the optimal number of elements for an adaptive isotropic mesh, up to a problem independent factor. Here the optimal number of elements is proportional to the $d/2$ power of the $L\frac{d}{d+2}$ quasi-norm of the error density, whereas a uniform mesh requires a number of elements proportionalto the $d/2$ power of the larger L^1 norm of the same error density to obtain the same accuracy. For problems with multiple scales, in particular, these convergence rates may differ much, even though the convergence order may be the same.

The second paper presents an adaptive algorithm for Monte Carlo Euler approximation of the expected value $E[g(X(_T), _T)]$ of a given function g depending on the solution X of an Itô stochastic differential equation and on the first exit time $_T$ from a given domain. An error expansion with computable leading order term for the approximation of $E[g(X(_T))]$ with a fixed final time $T > 0$ was given in [Szepessy, Tempone, and Zouraris, Comm. Pure and Appl. Math., 54, 1169-1214, 2001]. This error expansion is now extended to the case with stopped diffusion. In the extension conditional probabilities are used to estimate the first exit time error, and differ ence quotients are used to approximate the initial data of the dual solutions. For the stopped diffusion problem the time discretisation error is of order $N^{-1/2}$ for a method with N uniform time steps. Numerical results show that the adaptive algorithm improves the time discretisation error to the order N^{-1}, with N adaptive time steps.

The third paper gives an overview of the application of the adaptive algorithm in the first two papers to ordinary, stochastic, and partial differential equation.

The fourth paper investigates the possibility of computing some of the model functions in an Allen–Cahn type phase-field equation from a microscale model, where the material is described by stochastic, Smoluchowski, molecular dynamics. A local average of contributions to the potential energy in the micro model is used to determine the local phase, and a stochastic phase-field model is computed by coarse-graining the molecular dynamics. Molecular dynamics simulations on a two phase system at the melting point are used to compute a double-well reaction term in the Allen–Cahn equation and a diffusion matrix describing the noise in the coarse-grained phase-field.

PåGång

Massagestolen

Boka in dig på en stunds avslappnande massage. Passen är 15 minuter långa och sköna för trötta axlar och ryggar.

Boka på: http://www.csc.kth.se/bokning välj personalvård.

Qi-gong: Måndagar kl 9.00
Fredagar kl 11.15

Ett pass tar ca 20 minuter och gör gott för axlar och rygg när du sitter mycket framför datorn. Kom som du är, ingen föranmälan, inget ombyte behövs.

Qi-gong, höstens tider:

Vecka 35	31 aug	kl 11.15	rum 1537
Vecka 36	3 sep	kl 9.00	rum 4523
	7 sep	kl 11.15	rum 4523
Vecka 37	10 sep	kl 9.00	rum 4523
	14 sep	kl 11.15	rum 4523
Vecka 38	17 sep	kl 9.00	rum 4523
	21 sep	kl 11.15	rum 4523
Vecka 39	24 sep	kl 9.00	rum 4523
	28 sep	kl 11.15	rum 4523

Jobb

Nordic-Math-Job number: SE-0772
University: Lund University
Department: Mathematics LTH
Position: PhD student in Mathematcs (Modelling biological modelling)
Deadline: 31 August 2007
Contacts: Kalle Åström, ++46-(0)46-2224548, Karl.Astrom@math.lth.se
Gunnar Sparr, ++46-(0)46-2228528, Gunnar.Sparr@math.lth.se
Web-info: http://www.lth.se/omlth/ledigatjanster/?aid=432

Nordic-Math-Job number: SE-0777
University: Lund University
Department: Mathematics LTH
Position: University Lecturer in Mathematics
Deadline: 17 September 2007
Contacts: Gunnar Sparr, ++46-(0)46-2228528, Gunnar.Sparr@math.lth.se
Magnus Fontes, ++46-(0)46-2220539, Magnus.Fontes@math.lth.se
Web-info: http://www3.lu.se/info/lediga/admin/document/PA%202007-3052.pdf

Nordic-Math-Job number: SE-0776
University: Lund University
Department: Mathematics LTH
Position: University Lecturer in Mathematics (Applied Mathematics)
Deadline: 17 September 2007
Contacts: Gunnar Sparr, ++46-(0)46-2228528, Gunnar.Sparr@math.lth.se
Magnus Fontes, ++46-(0)46-2220539, Magnus.Fontes@math.lth.se
Web-info: http://www3.lu.se/info/lediga/admin/document/PA%202007-3051.pdf

Nordic-Math-Job number: SE-0778
University: Lund University
Department: Mathematics NF

Position: University Adjunkt in Mathematics
Deadline: 19 September 2007
Contacts: Tomas Claesson, ++46-(0)46-2228557, Tomas.Claesson@math.lu.se
Web-info: http://www3.lu.se/info/lediga/admin/document/PA%202007-2378.pdf

Nordic-Math-Job number: SE-0779
University: Uppsala University
Department: Mathematics
Position: 2 PhD positions in Mathematical Biology
Deadline: 28 September 2007
Contacts: David Sumpter, ++46-(0)18-471 3214, david@math.uu.se
Maciej Klimek, ++46-(0)18-471 3212, maciej@math.uu.se
Web-info: http://www.personalavd.uu.se/ledigaplatser/2030dorand_eng.html

Nordic-Math-Job number: SE-0780
University: Malmö University
Department: Technology and Society
Position: PhD position in Applied Mathematics (dynamic vision)
Deadline: 3 September 2007
Contacts: Anders Heyden, ++46-(0)40-665 77 16, anders.heyden@ts.mah.se
Naser Eftekharian, ++46-(0)40-665 76 49, naser.eftekharian@ts.mah.se
Web-info: http://www.mah.se/templates/Job____59030.aspx

Seminarielänkar

INSTITUT MITTAG-LEFFLER SEMINARS
www.ml.kva.se

Kommunikationsseminarium:
http://w1.nada.kth.se/media/Research/k-sem/k-sem-aktuell/

KTH – Computational Science and Engineering Centre
http://www.kcse.kth.se/seminars.html

KTH Matematik
http://www.math.kth.se/optsyst seminar/

S3 http://www.s3.kth.se/

SICS
http://www.sics.se/research/seminars.php

Stacken
http://www.stacken.kth.se/kalender/

Stockholm Bioinformatics Center and Dept Num Analysis and Comp Science
http://www.sbc.su.se/seminars/

Wireless@kth
http://www.wireless.kth.se

Kalendarium aug-okt 2007

30 August at 15.15 Seminar
Teaching Physics and Astronomy in the Early Years, Maria Kallery, Aristotle University of Thessaloniki, Greece, Klein Auditorium, Albanova,

31 augusti kl. 9 - ca 16, D-teknologernas Lådbilsrace.
Delta med ett lärarlag i D-teknologernas Lådbilsrace. Teknologerna börjar bygga sina kl 9 på fredagen och själva racet börjar kl 14 och tar ca 2 timmar.

3 September 10-12 Minisymposium on Scientific Computing at KTH
on the occasion of the 10 year celebration of the Master Programme at KTH. (venue announced later on)

3 September 3, 15:15 Linnaeus Center ACCESS Distinguished Lecture Series
Reinventing Compression: The New Paradigm of Distributed Video Coding. Professor Bernd Girod
Salongen, Osquars backe 31, KTH

7 september. kl. 14 INVIGNING
QUOTTIS KTHs tillfälliga barnpassning för barn 6-36 månader

7 September 2007, 15:15 - 17:00, X-job seminar at Speech, Music and Hearing:
Sonification of a diary, Anna de Witt, The seminar is held in Fantum.

11 september 2007, kl. 13.30-16.30, Konferens
Konferens: Uppfinnare, entreprenörskap och tillväxt i den globala ekonomin. Plats: Konferenscenter Rosenbad, Drottninggatan 1, Stockholm

13 september 2007, klockan 10.00 -17.00 Konferens
Strategiskt Jämställdhetsarbete Kunskap Dialog och Resultat. Plats: Volvo i Göteborg

17 september, kl 13:00 Disputation
Adaptivity for Stochastic and Partial Differential Equations with Applications to Phase Transformations
Erik von Schwerin, Numerisk Analys. Sal F3, Lindstedtsvägen 26

23-24 oktober. COMSOL Conference 2007
COMSOL Conference 2007 i Grenoble på Europole, World Trade Center of Grenoble, France

10 September, 13:15 TCS-seminarium:
Generating Propagators for Finite Set Constraints, Christian Schulte, Department of Electronic, Computer, and Software Systems, KTH ICT, room 1537

INBJUDAN

Uppfinnare, entreprenörskap och tillväxt
i den globala ekonomin

Tid: Tisdagen den 11 september 2007, kl. 13.30-16.30
Plats: Konferenscenter Rosenbad, Drottninggatan 1, Stockholm

REGERINGSKANSLIET