

Conference Frontiers of Quantum and Mesoscopic Thermodynamics 2019

Public Lecture of William Phillips with Concert

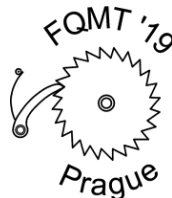
Lecture Hall of the Pyramida Hotel
Tuesday July 16, 2019

19:00 – 19:15	Music introduction Opening address
19:15 – 20:15	William D. Phillips: “Time, Einstein and the coolest stuff in the universe”
20:15 – 20:30	Discussion
20:30 – 20:45	Break
20:45 – 22:00	Concert

Music Introduction

G. F. Handel
Prague Brass Soloists

Minuet from Water music



<https://fqmt.fzu.cz/19/>



Time, Einstein and the coolest stuff in the universe

William Daniel Phillips

*Joint Quantum Institute, National Institute of Standards and Technology and
University of Maryland, Gaithersburg, USA*

At the beginning of the 20th century Einstein changed the way we think about Time. Now, early in the 21st century, the measurement of Time is being revolutionized by the ability to cool a gas of atoms to temperatures millions of times lower than any naturally occurring temperature in the universe. Atomic clocks, the best timekeepers ever made, are one of the scientific and technological wonders of modern life. Such super-accurate clocks are essential to industry, commerce, and science; they are the heart of the Global Positioning System (GPS), which guides cars, airplanes, and hikers to their destinations. Today, the best primary atomic clocks use ultracold atoms, achieve accuracies of about one second in 300 million years, and are getting better all the time, while a new generation of atomic clocks is leading us to re-define what we mean by time. Super-cold atoms, with temperatures that can be below a billionth of a degree above absolute zero, use, and allow tests of, some of Einstein's strangest predictions.

This will be a lively, multimedia presentation, including exciting experimental demonstrations and down-to-earth explanations about some of today's hottest (and coolest) science.

William Daniel Phillips

William Phillips is an American physicist of Italian descent on his mother's side and of Welsh descent on his father's side. He has been working at the National Bureau of Standards (now NIST, National Institute for Standards and Technology) since 1978. From 2001 he is also a Distinguished Professor of University Maryland, College Park and from 2008 a Co-director of the NSF Physics Frontier Center at the Joint Quantum Institute of the NIST and University of Maryland.

He graduated from Juniata College in 1970 summa cum laude. He received his doctorate from the Massachusetts Institute of Technology. Phillips began his experiments with laser trapping and cooling shortly after he arrived in 1978 at the National Bureau of Standards; his intent was to create a more accurate atomic clock. Several of his innovations in the following years became landmarks in the field. These included a device using a laser along with a magnetic field to decelerate and cool an atomic beam; demonstrating the first device that trapped electrically neutral atoms (a magnetic trap); and measuring a temperature far below that predicted by the accepted theory of laser cooling at the time (sub-Doppler cooling). Today, Phillips' group manipulates Bose-Einstein condensates (BEC) into optical lattices to do their quantum simulations and works on "atomtronics" making circuits that conduct BECs, rather than the usual electrons.

William Phillips received the 1997 Nobel Prize in Physics "for development of methods to cool and trap atoms with laser light". His honors include many prizes, medals, memberships of several Academies of Sciences and honorary doctorates.

Program of the concert

G. F. Handel (1685 - 1759)

J. Thuri (oboe)

J. Kšica (harpsichord)

Trio sonata in C minor

Adagio, Allegro, Largo, Bourrée
anglaise

F. X. Thuri (1939 - 2019)

J. Thuri (oboe)

J. Kšica (harpsichord)

Ekloga Matutina

J. J. Bodin de Boismortier (1689 - 1755)

Jan Thuri (oboe)

L. Hucek (bassoon)

J. Kšica (harpsichord)

Trio sonata A minor

Vivace, Largo, Allegro

F. S. Geminiani (1687 - 1762)

L. Hucek (bassoon)

J. Kšica (harpsichord)

Sonata A minor

Adagio, Allegro assai, Grave,
Allegro moderato

P. J. Vejvanovský (1640 - 1693)

Prague brass soloists

Baletti a 5

A. Dvořák (1841 - 1904)

Prague brass soloists

My Mother Taught Me

A. Dvořák (1841 - 1904)

Prague brass soloists

Largo

from the New World Symphony

A. Dvořák (1841 - 1904)

Prague brass soloists

Humoresque

E. Morricone

Prague brass soloists

For a Few Dollars More

H. Arlen (1905 - 1986)

Prague brass soloists

Over the Rainbow

J. Hisaishi

Prague brass soloists

Castle in the Sky

A. Piazzola (1921 - 1992)

Prague brass soloists

Oblivion

J. Kern (1885 - 1945)

Prague brass soloists

Smoke gets in your eyes

Performers

Luboš Hucek (bassoon)

He regularly performs with The Prague Symphony Orchestra. He first aroused considerable public recognition in 1981 when he won The International Prague Spring Festival at the age of 24 when he was already bassoonist of the Film Symphony Orchestra and The National Theatre Orchestra. He has played as a soloist with renowned orchestras at concerts in many countries of the world.

Josef Kšica (harpsichord)

Josef Kšica studied organ at the Conservatory in Brno and at the Academy of Performing Arts in Prague in the class of professors Milan Šlechta and Jiřina Pokorná. In addition, he studied composition with Professor Jan Duchoň. After many years of practicing as an organist and a singer of Czech leading choirs (Prague Philharmonic Choir, Prague Chamber Choir) Mr. Kšica became the choirmaster in St. Vitus Cathedral in Prague. Beside these activities, he performs old Czech as well as world sacred music, occasionally in new premieres. He also cooperated with the specialist on Bach music, Professor H. Rilling. As an organist, Mr. Kšica has been performing at concerts in his country and abroad. He has also been increasingly seen on the stage as a conductor. Aside from his interpretation achievements, Josef Kšica is a well-known scholar and editor for many European archives. *Ars Instrumentalis Pragensis*, in particular, is grateful to him for his continued broadening of their repertoire.

Jan Thuri (oboe)

A leading Czech oboist Jan Thuri was born into a family of musician in Praha in 1975. He came in contact with art at an early age through playing violin and piano. He has been playing oboe since the age of thirteen. When he graduated from the Prague Conservatory in the class of his father Frantisek Xaver Thuri, he crowned his studies at the Utrecht College of Music with Ernest Rombout and at the Ostrava University with Dusan Foltyn. He also took part in a few excellent courses with Jean-Louis Capezzali, Maurice Bourgue, Han de Vries, Jérôme Guichard and Jacques Tys. During his studies he won many awards in international competitions (Czech Republic, France, Great Britain). Jan Thuri is a sought-after solo and chamber music player. He co-operates with the foremost local and foreign orchestras. As a soloist, Jan Thuri has played in virtually all countries of Europe, in the USA, Japan and Korea. He records for the radio stations Czech Radio, Radio France and the British BBC where he recorded the Richard Strauss oboe concerto in D-Major in live broadcast. In 2002 he founded the chamber orchestra "Thuri Ensemble" and he plays actively with them at home and abroad. Besides that he is a member of several chamber orchestras, primarily ensembles specialising in the baroque style music, he is also a member of wind trio "Trio DuBois". In the exceptionally rich repertoire of Jan Thuri there are compositions of all styles and periods including contemporary and also avant-garde ones. The artist is often sought-after for the premiere interpretation of compositions of famous Czech

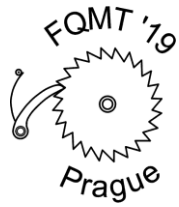
and foreign contemporary composers. Jan Thuri has made a number of outstanding recordings for EMI, Virgo and Thuri Records. One of the most important pieces of work of Jan Thuri in the recent period of time is a collected recording of his father's concertos for oboe and orchestra. Since 2004 Jan Thuri has held oboe and chamber music classes at the Prague State Conservatory and performs master-classes in Europe and Asia (Japan, Korea). Jan Thuri is often invited to take part in juries for international competitions (Chieri, Wroclaw, Prague).

The Prague Brass Soloists

Miroslav Kejmar, trumpet, flugelhorn
Marek Vajo, trumpet, piccolo trumpet
Daniela Roubíčková, French horn
Jiří Novotný, trombone
Karel Kučera, bass trombone
Karel Malimánek, tube

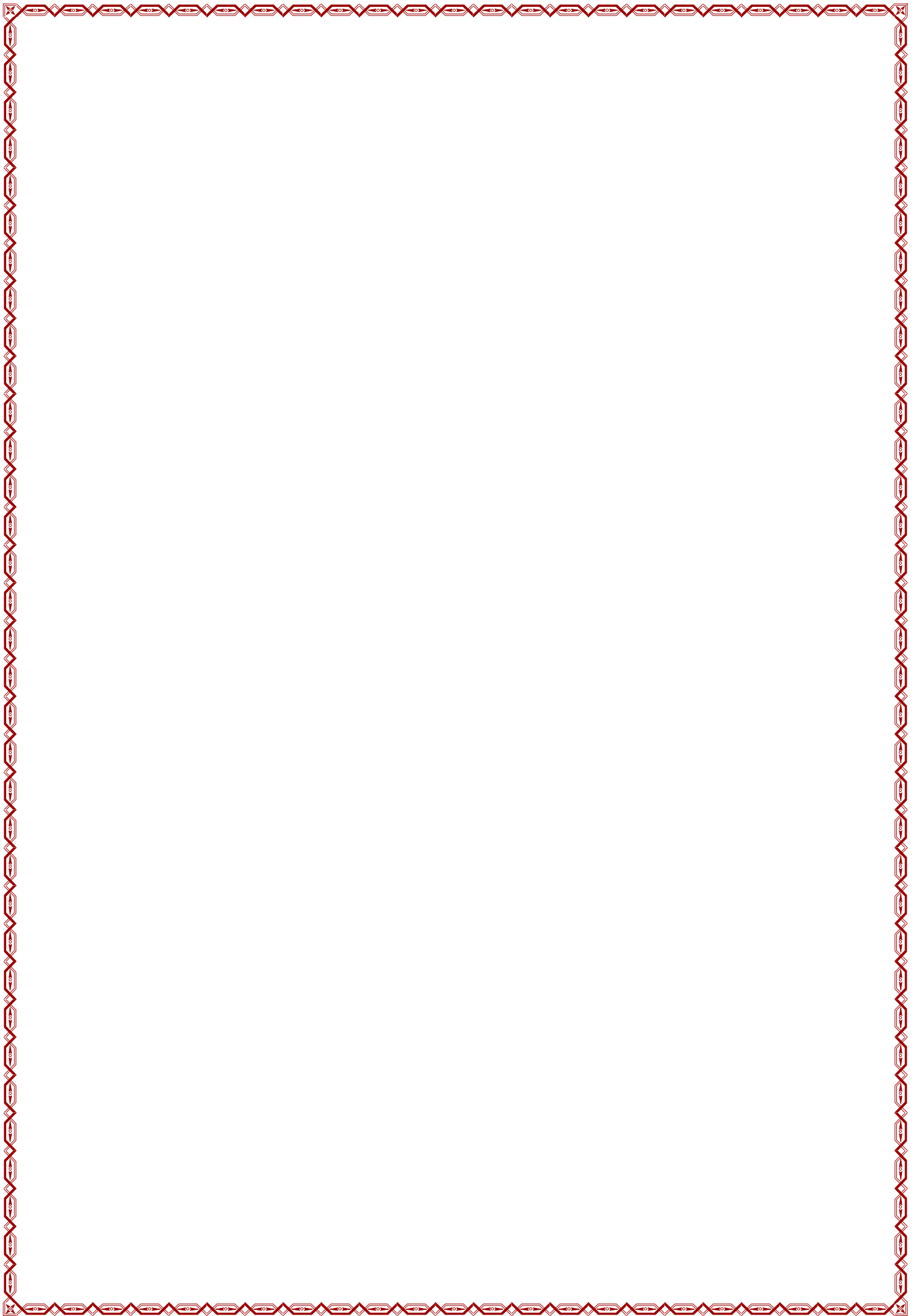
The ensemble was founded already in 1972. Just from the very beginning, its members are outstanding interpreters of various Prague orchestra (e.g. Czech Philharmonic Orchestra, Prague Symphony Orchestra) and soloists. The repertoire covers the best of English, German and Italian Renaissance and Baroque music (frequently in the ensemble's attractive arrangements) as well as original works by contemporary composers. The Prague brass soloists play often also evergreens of jazz and popular music. They have played all over the world and recorded many CD's. The cofounder and the leader of the ensemble is Miroslav Kejmar.

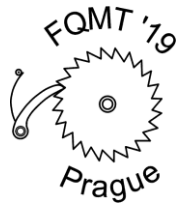
Miroslav Kejmar graduated from The Prague Conservatory after studies with Professor Junek. He then studied in the class of Professor Václav Pařík at The Prague Academy of Arts. Already during his studies at The Academy of Arts in Prague, he played in various orchestras, e.g. in the Film Symphony Orchestra and the Czech Philharmonic Orchestra. Apart from guest appearing with several chamber brass ensembles, he works on a permanent basis with the Prague Brass Soloists, of which is a founding member. His career as a soloist is equally wide-ranging. He is well known to audiences in many European countries, as well as Japan. Apart from classical music, he is also interested in dance, jazz and popular music. For about three years, he played in the orchestra involved in the famous musical, Jesus Christ Superstar. He was a member of the Karel Vlach orchestra. Miroslav Kejmar was, over thirty years, the first trumpeter of the Czech Philharmonic Orchestra, and played many years with the "Ten of the Best" ensemble, the famous international group of trumpeters. He nowadays plays frequently as a soloist; he is also a member of Czech Philharmonic Brass ensemble.



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