DAILY NEWS

International Workshop on

Noncommutative Geometry (NCG2005)

3th issue, September 14, 2005

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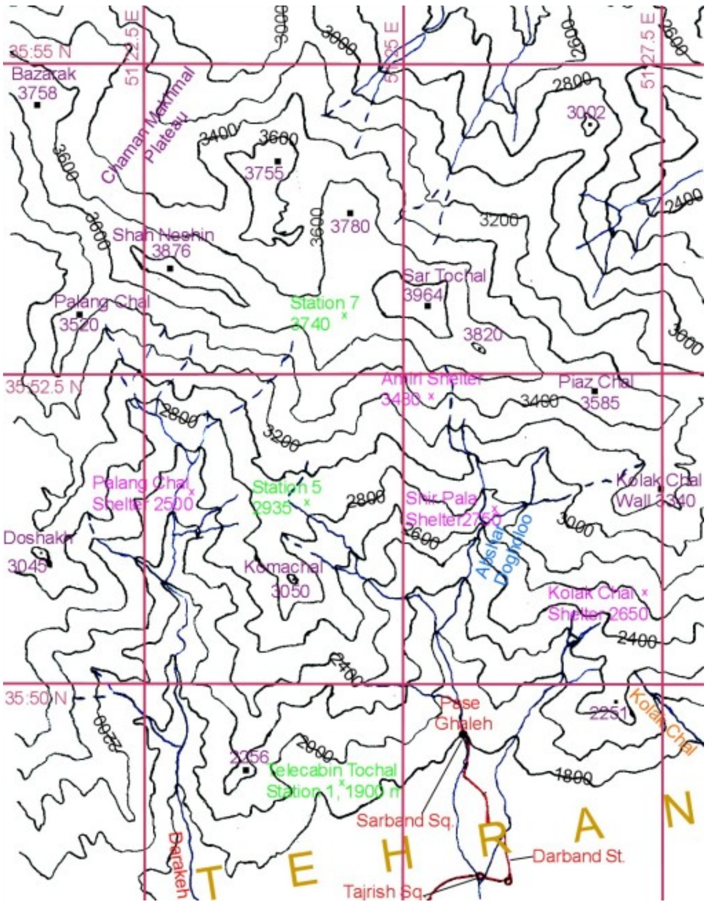
Tochal

The high mountains hanging over Tehran give the city its unique character. At home, at school and in the office, all you have to do is look out a window opening to the north to get a glimpse of this great mountain range. The entire city is located on its foothills and ranges in elevation from about 1000 m at its southern most points to about 1800 around its northern periphery. Mount Tochal marks the southern boundary of the Alborz mountain range at Tehran's longitude and stands at 3964 m above sea level. It is only 7 km from the northern most neighborhoods of Tehran. It is a landmark of the city. The summit of Mt. Tochal, known as Sar Tochal, is the high point along a 12 km long ridgeline that is entirely above 3500 m and much of it is over than 3700m. While the eastern 8 km of the ridgeline runs east-west and looms directly above northern Tehran, the western 4 km takes a northwesterly direction and its view from northern Tehran is blocked by lower peaks such as Palang Chal (3520 m) and Doshakh (3045 m) (see the topographic map). Besides the Sar Tochal summit, there are other outstanding peaks on the ridgeline. The most notable of these at 3876 m is the summit of Mt. Shah Neshin 3.75 km to the west of Sar Tochal.



From mid autumn to mid spring, the higher slopes of Mt. Tochal, above 3000 m, are covered by a thick blanket of snow. Although in winter it snows in Tehran, it usually melts away after a few days of sunshine. But patches of snow stay on the higher slopes well into early summer. The sight of snow can be an open invitation to those who wish to escape the 40 degrees C temperatures of Tehran's summers. From mid summer through early autumn, the mountain appears brown and barren. At times, the city's smog severely blocks the view of the mountain.

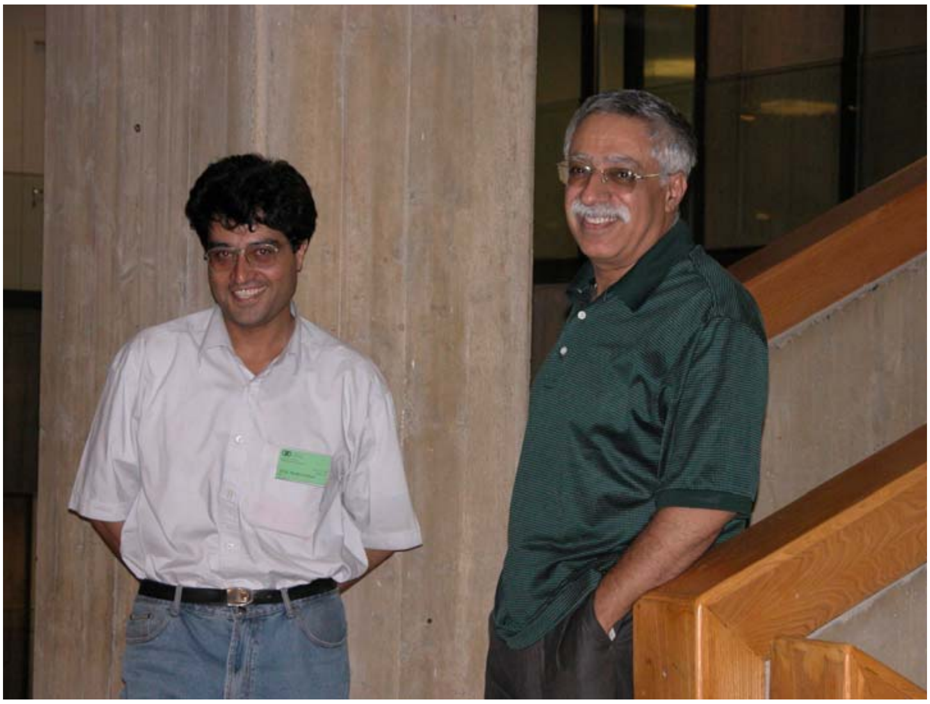
Several popular hiking trails start in the northern suburbs and wind through the mountain range to various elevations. West to east, these include Darakeh, Telecabin, Darband and Kolak Chal. Darband offers the most direct route to the summit. Except for the Telecabin trail, the rest of the trails follow tree-lined mountain streams at the bottom of valleys where trailside cafes provide a place to rest and enjoy refreshments. Hiking along these trails has recently gained great popularity.

On weekends, thousands of people jam-pack them. Rock climbing opportunities are also available in many areas especially at the Bande Yakhchal and Kolak Chal (see the topographic map). Bande Yakhchal is a huge rocky outcropping that sits to the east of the Darband Valley. It is a few hundred meters high and reaches the top elevation of 3120 m. Kolak Chal Wall, located above the Kolak Chal Shelter, has an elevation of 3340 m at the top. Both of these impressive walls are visible from Tehran.

An 8 km long gondola line (Telecabin) that goes from an elevation of 1900 m to a point on the crest of the mountain at 3740 m was completed in the late 1970's. At the time, it was claimed to be the world's longest gondola line. There are several ski lifts around the main line,-- a few over the south-facing slopes near the Gondola's 5th station (2935 m) and two over the north-facing slopes near the top station (3740 m) where a hotel is also located. The ski season near the top station often lasts until June (for more information go to Tochalcomplex.com). Despite its potential, the Tochal ski area has not been fully developed and is unable to compete with the larger and more popular resorts of Shemshak and Dizin 60 km away.

Some Photos of Tochal

Two Physicists at the heart of Math-Land!



M. M. Sheikh Jabbari*: In this conference I learned that even matrices have been first invented and used by physicists.*
H. Arfaei: *It seems that this is not an isolated event and is always the case. I do not know what mathematicians would do in a world without physicists. By the way to be fair, you should also appreciate their honesty in giving the credits.*

A happy mathematician's view-point ☺

Mathematicians and physicists are different kinds of people and by comparing them with automobiles sales persons, we can see the difference:
Mathematicians sell new cars with guarantees of quality and service. Physicists sell used cars, nice and shiny, but with many things hidden (Sometimes the cars do not even have motors). New cars usually last longer than used cars.

A fair physicist's view-point ☹

It is not important who decorates a car in a nice package even sometimes with guarantees; in order to sell it in a better price but who "design" the car and shows that it works.

To be continued ...

Quote of the Day

A mathematician is a machine for turning coffee into theorems. *Paul Erdos*

Atiyah and Singer on Noncommutative Geometry

Atiyah

I would like to emphasize Connes' non-commutative differential geometry. Alain Connes has this rather magnificent unified theory. Again it combines everything. It combines analysis, algebra, geometry, topology, physics, and number theory, all of which contribute to parts of it. It is a framework that enables us to do what differential geometers normally do, including its relationship with topology, in the context of non-commutative analysis. There are good reasons for waiting to do this, applications (potential or otherwise) in number theory, geometry, discrete groups, and so on, and in physics. An interesting link with physics is just being worked out. How far this will go, what it will achieve, remains to be seen. It certainly is something that I expect will be significantly developed in the first decade at least of the next century, and it is possible it could have a link with the as-yet-undeveloped (rigorous) quantum field theory.

Singer

Alain Connes's program is very natural—if you want to combine geometry with quantum mechanics, then you really want to quantize geometry, and that is what noncommutative geometry means. Noncommutative geometry has been used effectively in various parts of string theory explaining what happens at certain singularities, for example. I think it may be an interesting way of trying to describe black holes and to explain the Big Bang. I would encourage young physicists to understand noncommutative geometry more deeply than they presently do. Physicists use only parts of noncommutative geometry; the theory has much more to offer. I do not know whether it is going to lead anywhere or not. But one of my projects is to try and redo some known results using noncommutative geometry more fully.

Khoresht-e Badenjaan

4 Servings

500 grams lamb or beef
8 small eggplants
3 medium onions
2 tablespoons tomato paste
2 tablespoons fresh lime juice
cooking oil
2 teaspoons salt
1/2 teaspoon turmeric
1/2 teaspoon black pepper

Peel onions and slice thinly. Fry in oil until slightly golden. Cut meat into small pieces and fry with onions until colour changes. Bring 2-3 glasses of water to a boil, and add to meat. Add 1/2 teaspoon salt, turmeric and pepper, and cook over medium heat for about one hour. When meat is cooked, there should be about one glass of water left. Add tomato paste and lime juice, and mix well.

Peel eggplants and slice length-wise to a thickness of 1 cm. Add salt on both sides and leave for two hours and then dry the moisture and fry in abundant oil on both sides over medium/low heat until golden. Place eggplants over meat (but do not mix with meat). Place the lid on and cook over low heat for another 10 minutes. Serve Khorest-e Badenjaan hot with plain rice (Polow or Chelow).

Polow (chelow)

4 Servings

500 grams long-grain rice or basmati
6 tablespoons cooking oil
1 tablespoon salt

The preparation of polow (chelow) is more elaborate than kateh and results in a delicious non-sticky rice. It is normally served with kababs or any of the main Persian dishes.

Wash rice twice and soak in salted warm water for 2-3 hours, then drain the water.
Pour water in a large pan until it is half-full and bring it to a boil.
Add rice and a spoonful of salt and continue boiling until rice slightly softens.
Pour rice into a drain and wash it with slightly warm water.

Pour 3 spoonfuls of cooking oil into the pan and add rice. Pour 3 more spoonfuls of oil over rice.
Cover the pan and cook over low heat for about half an hour. If cooking time is increased, a delicious crispy layer of rice (called ta-dig) will form at the bottom of the pan.