

If the computer is made of light

Two scientists Americans have caught a photon bundle in a solid one. Which thing wants to say? That they are creating first blots of it electronic quantistiche, of an incomparable power and a precision regarding the computers puts into effect them. Here like and because.

I world of the computers will not be never more that one than before, word of scientists. Because finally they are resolutions to make what it was thought impossible: they have stopped the light and they have caught it in a solid one. In little words, they have arrested makes us of photons (the particles of which it is made the light), that they travel to 300 mila km to the second, bloccandoli and storing them in a crystal (for the precision, silicato of ittrio drugged with rare-earths). To make it for first they have been Philip Hemmer and Selim Shahriar to the Air Force Research Laboratory di Hanscom, a military center studies legacy to NASA, in the Massachusetts. It is a news that it has of the incredible one, but still more incredible they will be the applications that this conquest will bring in the electronics and the telecommunicationses. Because to control the light it means to dominate photons in order to use them in the electronic apparatuses, included the computers.

edited by **Arianna Dagnino**

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Il world of the computers will not be never more that one than before, word of scientists. Because finally they are resolutions to make what it was thought impossible: they have stopped the light and they have caught it in a solid one. In little words, they have arrested makes us of photons (the particles of which it is made the light), that they travel to 300 mila km to the second, bloccandoli and storing them in a crystal (for the precision, silicato of ittrio drugged with rare-earths). To make it for first they have been Philip Hemmer and Selim Shahriar to the Air Force Research Laboratory di Hanscom, a military center studies legacy to NASA, in the Massachusetts. It is a news that it has of the incredible one, but still more incredible they will be the applications that this conquest will bring in the electronics and the telecommunications. Because to control the light it means to dominate photons in order to use them in the electronic apparatuses, included the computers.



Philip Hemmer e Selim Shahriar sono i due studiosi dell'Air Force Research Laboratory di Hanscom che stanno realizzando il primo computer quantico.

The consequences for the electronics are still unimaginable

"We will be finally in a position to constructing able quantistici computers to store a gigantic size of information

like saying, after more powerful null it could be created. In short draft of a computer that operates to subatomico

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reflect on the contradictions of the Net

Mouse up: we are tech setter

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Breakfast with Internet

From New York: in the coffees connection wireless gratis to the Web for the customers who have with himself a PC. And in Italy...

When you ignite the PC you choose your style

The font, that is the characters with which he writes himself, are tantissimi. Councils in order to learn to know them

All crazy for the digital airbrush them

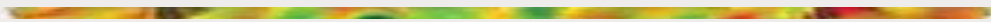
The airbrush-artist gather to Milan of the world. That what makes and as they work

Preferred the smooth ones or gassate?

As the dive of Hollywood are lean! But there is a situated one that increases them of weight. This turns out to you

with an absolute precision and total", explains Hemmer, investigator near the A&M University of Texas, "therefore as we will be in a position to transmitting one equally enormous mass of give to you, incomparable regarding today. Moreover, being they give to you manipulates to you quantisticamente, their emergency will be inviolabile total and." The crittografata information therefore could in fact be codified and therefore only read from who it possesses the same key. But that cos' it is exactly a quantico computer (to see also riquadro in the pag. to flank)? According to the astrophysical Japanese Michio Kaku it represents "the completed computer", the definitive computer:

level, through the invisibili particles of which the matter is composed. Therefore, it follows the laws of the quantistica mechanics and more those of the used binary code from it does not blot any of Turing, that is from the traditional computers. It is obvious that an innovation therefore strongly "will open the doors to a way to operate that still turns out still inconceivable for the human mind, from the moment that on one side allows the existence of conditions up to now separated [to the intangible matter, from the other that invisibile, ndr]", explains to HappyWeb Gianni Of the Antoni, teacher of computer science to the University of Milan. "In short all that represents a deep transformation also on the philosophical plan, because it will make to think us in different way."



To store luminous energy under shape of magnetic waves

"Already today", Michio Kaku says, "the quantistici transistors (first rudimentali attempted you of giving life to a quantistico computer) is not more only the crazy dreams of a physicist dipped in subatomic truths. In laboratory already they have been created." And now, after the happened one of the experiment of Hemmer and Shahriar, the searches in this field will have an unexpected acceleration, inasmuch as a way has been found in order to store the luminous energy under shape of magnetic waves of quantistica nature. "To this point", it continues Kaku, "the technicians will be able to replace puts into effect it them quantistici transistors, than still they use traditional threads and circuits, with true and own processors in a position to operating to level of quantiche waves, therefore of subatomica matter. Naturally we will

And from these complex mazes of interconnections the first true systems of "not human" intelligence could a day emerge. In many laboratories of the world "the true" scientists have already begun to experience the use of neurali nets animals in order to create organic computers, exceeding the line of border between animated matter and inanimata matter. One of the pioneers of this new tradition of the search is without doubt William L. Ditto, a physical young person of the Georgia Institute of Technology, that he has been able, in via experiences them, to arrange the normal circuits of silicon with neurons of sanguisuga, that is with nervous cells living. Ditto and its connects is is left from the idea that "a biological" computer, that is in a position to taking advantage of organic neurali nets, would have presumably to supply correct

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If the computer is made of light

Therefore the quantistica technology will enter in our life

Valley Hut

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Com' is soft the new style hi-tech

Today the design creates houses

have to still attend quite a lot of years before finding again on the market these portentosi jewels." But il.dado.è.tratto. The thing still more amazing is but to try to imagine which incredible ones blots some could still be born from this plethora of studies, in odore of fantascienza, the moment in which it was succeeded to use molecules of Dna in order to construct quantistici computers, making that is so that the codes of the life meet those of the matter. To that point, reputano the experts, blots some to them will have caught up a such complexity that will be for they possible to reply the 100 billions of neurons and the triliardi of sinapsi that constitute the human brain.

answers also being based on partial information (what that instead do not happen in the computers put into effect them, that they have need of programming and breaking in of gives to you in order to elaborate whichever answer). The neurons of sanguisuga have demonstrated just this advanced functionality: making to bounce they give between they (a po' to you with the same principle with which work a quantistico computer), is in a position to executing activities "similar to the thought", like says Ditto.

similar to "digital shelters them" from the warm, round shapes and wrapping

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Toh, how many fanta-Mac!

The fan of the Apple they more design bizzarri the models of the future

Six in the troubles? It crushes this key

The new Gsm arrives also in Italy that saves the life

That cos' it is a quantico computer?

Goodbye calculates seriali: the computer of the future "will reason" like the human brain. And it will resolve astronomical calculations in little second ones.

A quantico computer work in absolutely various way from that one of a computer as we know it today. Thoughts: it could be contained in the liquid of a cup of coffee and being diecimila, one hundred thousand times more powerful than a PC they puts into effect. This because it operates to atomic level, therefore in the reign of invisibili particles by rough estimate human (pack-saddles to consider that a granello of sand it contains one hundred billions of billions of atoms, that is 1 continuation from twenty zeri). Operating to atomic level the quantici computers they do not follow the modalities of the normal computers but they follow the

complexes of those you concur yourself with a PC tradizionale: invece to operate in seriale way, would be in a position to elaborating the information in parallel, like ago the brain. A banal example: in order to verify in which of the two thousand rooms of a mega-hotel a customer finds itself, a normal computer would have to try that name room for room, while a quantico PC cercerebbe at the same time in all the rooms. And therefore it calculates astronomical that they would demand decades for being resolved would find solution in least time. In order to more know some on the Web: www.physics.uq.edu.au/quant_comp_tech : studies and explanations on the quantico PC. www.dcs.ex.ac.uk/~jwallace/sim_table.htm : the programs that of it simulate the operation. www.howstuffworks.com/question475.htm : as a quantico PC works.



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Cyber expectant, fatevi a tea

To the water-melon, the sesame, the tapioca... Rarest it finds them here

ambiguous laws of the quantistica mechanics. If in fact to the base of the PC odierni the bases of the binary code are found the bit (), that they can be of time in time 0 or 1, in the quantici computers the base unit is "qbit" (the quantum bit), that it can at the same time assume all the 32 quantici states of an electron.

It is just thanks to this characteristic that a quantico computer would be in a position to making calculations infinitely more

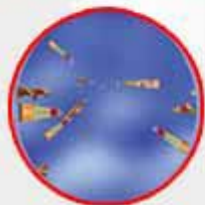
It is the road towards the Superman?

The studies on the quantistico computer are met with those on the molecular PC. With the objective to fuse human intelligence and that one of the matter.

Computer quantistico



Computer con molecole di Dna



The computer made up of Dna (you see also HappyWeb 1/2 of 2002) replaces the circuits in silicon with organic molecules of the nervous nets animals. The quantistico computer, instead, work to subatomic level, using the invisibili particles of which the matter is composed all. Both are, for hour, in phase of study and search. But the objective - not even too much far away - is that one to fuse the two roads and to arrive to the creation of "post-human" intelligences, in which the codes of the life and the matter they operate in sinergico and powerful way.

Sono le basi per il superamento della specie umana...



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Il 14 marzo esce la nuova console. HappyWeb l'ha testata in anteprima. E ha scoperto che...

È tornato E.T.

L'alieno ha compiuto 20 anni: arriva un nuovo game e il film versione hi-tech



Business news

Notizie, protagonisti, curiosità e start up della

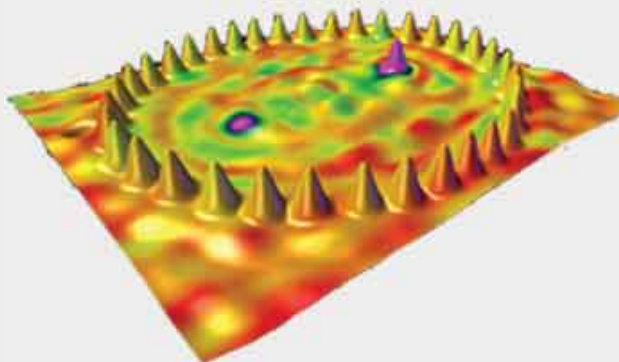
Parallelamente, il matematico californiano Leonard Adleman ha iniziato a mettere a punto la prima generazione di computer molecolari che possano operare grazie ai meccanismi con cui agisce il Dna umano. Stanno dunque nascendo entità capaci di fondere la nostra intelligenza organica, basata su cromosomi e neuroni, con quella inorganica subatomica.

Questi futuri computer combineranno il livello umano d'intelligenza con la velocità, l'accuratezza e la capacità di condivisione dell'informazione dei pc quantistici. In altre parole, con queste macchine noi uomini stiamo ponendo le basi per il superamento della nostra stessa specie.

I codici della vita incontrano i codici della submateria. Ciò significa che stanno per nascere macchine capaci di mescolare l'intelligenza umana e quella dei supercomputer.



Modello in 3D del "miraggio quantico" (cioè il trasferimento delle informazioni da un atomo a un altro).



net-economy

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mangia

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Il matematico
Leonard Adleman
della University
of Southern
California.

C'era una volta il Deep Blue...

Breve storia dei computer più potenti del mondo.

Fino a poco tempo fa il più potente computer del mondo era l'Asci White di Ibm del Livermore National Laboratory, che viene utilizzato per calcolare le conseguenze delle esplosioni nucleari. Di recente il primato è passato al nuovo gioiello di Compaq, il Terascale, che si trova al Pittsburgh Supercomputer Center. Il Cern di Ginevra conta di superare tutti entro tre anni, con un supercomputer a griglia. Ma i pc basati su molecole e quanti, quando diventeranno realtà, potrebbero rendere rudimentali e antiquati le macchine attuali che "ragionano" ancora col silicio.

1997: Deep Blue

Deep Blue, il mitico cervellone messo a punto da Ibm nel '97, per la prima volta nella storia, riuscì a battere a scacchi il campione mondiale Gary Kasparov. Era in grado di calcolare 200 milioni di mosse al secondo, Kasparov ne poteva calcolare 3 al secondo.

2000: Asci White

L'Asci White Ibm (giugno 2000) è migliaia di volte più potente di Deep Blue. È costato 110 milioni di dollari. È al Livermore National Laboratory, un ente federale Usa di ricerca. Grande quanto un paio di campi da basket, può svolgere un trilione di operazioni al secondo.

2001: Terascale

Compaq ha presentato nell'ottobre 2001 Terascale, il "mostro" informatico commissionato dal Pittsburgh Supercomputer Center. Consuma ogni giorno tanta elettricità da illuminare una cittadina di 2000 abitanti.

2002: Teragrid

Entro la fine di quest'anno il governo Usa lancerà Teragrid. Non sarà dislocato in un unico luogo, ma sfrutterà la potenza di quattro computer operanti in altrettanti centri di ricerca. Sarà in grado di operare 13,6 trilioni di calcoli al secondo.

Datagrid

Il progetto Datagrid del Cern di Ginevra punta alla creazione, entro il 2005, di un supernetwork di computer in grado di lavorare in parallelo, con centinaia di migliaia di postazioni a livello planetario (Grid = griglia). La potenza di calcolo è pari a quella di 140 mila pc.

