SCUOLA NORMALE SUPERIORE

RELAZIONE ATTIVITA' ANNUALE DEI PERFEZIONANDI/DOTTORANDI – PRIMO ANNO
REPORT ON THE PHD ACTIVITY – FIRST YEAR

NOME E COGNOME NAME AND SURNAME	Ashkan Abedi
DISCIPLINA/PHD COURSE	Nanoscienze

CORSI FREQUENTATI CON SOSTENIMENTO DI ESAME FINALE ATTENDED COURSES (WITH FINAL EXAM)	VOTAZIONE RIPORTATA MARK	NUMERO DI ORE HOURS
Quantum Information Theory	27	40
Quantum Technologies, Systems and Method		40
Theory of Many-Body Systems		30

CORSI FREQUENTATI SENZA SOSTENIMENTO DI ESAME FINALE ATTENDED COURSES (ATTENDANCE ONLY)	NUMERO DI ORE HOURS

ALTRE ATTIVITÀ FORMATIVE (SEMINARI, WORKSHOP, SCUOLE ESTIVE, ECC.) – DESCRIZIONE OTHER PHD ORIENTED ACTIVITIES (SEMINARS, WORKSHOPS, SUMMER SCHOOLS, ETC) – DESCRIPTION	NUMERO DI ORE HOURS
ITALIAN LANGUAGE	60

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ATTIVITÀ DI RICERCA EVENTUALMENTE SVOLTA (MAX. 3.000 CARATTERI) RESEARCH ACTIVITY (MAX. 3000 CHARACTERS)
A Hilbert space-filling curve creates a mapping between a 1D and 2D space that preserves locality. We compare the entanglement distribution in the Hilbert curve network and the Snake curve network for the generation of Bell pairs between distant nodes. In particular, we study the behavior of the networks when a fixed number of additional quantum connections are allowed to be added to the network. Furthermore, in an attempt to find the most efficient arrangement of resources, we propose quantum networks with a similar structure to tree graphs. In addition, we observed that increasing the quantum memory of each node can play an essential role in improving the efficiency of the network for generating maximally entangled pairs between distant nodes.

EVENTUALI PUBBLICAZIONI PUBLICATIONS (IF AVAILABLE)

DATA DATE	18/10/2020	FIRMA SIGNATURE	Ashkan Abedi