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Title: Three-dimensional communication extension base station unit

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What is 3D aerial base station position planning based on?

Wu J, Yu P, Feng L, et al. 3D aerial base station position planning based on deep Q-network for capacity enhancement. In: IFIP/IEEE symposium on integrated network and service management (IM), Washington, DC, 8-12 April 2019, pp.482-487. New York: IEEE. 18. Luo X, Zhang Y, He Z, et al.

What is a UAV base station?

UAV mounted base stations (UAV-BSs), also called drone-BSs, can provide rapid and cost-effective wireless connectivity for cellular networks . Furthermore, with autonomous decision capability, UAV-BSs can fly autonomously by embedded/built-in microprocessors or distant automated control without human intervention .

What is a 3D continuous-space radio channel?

The underlying channels show an evolutionary trend to 3D continuous-space radio channels that combine antennas and wireless propagation channels, in comparison to discrete local-space wireless propagation channels in previous generations.

What are the research thrusts of 3D continuous space radio channels?

We start by revealing the connections and gaps between these four fundamental theories. Then, an in-depth investigation on the four major research thrusts of 3D continuous-space radio channels is provided: 1) channel measurements and modeling, 2) channel capacity analysis, 3) general antenna design, and 4) wireless system design.

How DQN algorithm is used to move air base stations?

Location moving process of air base stations using DQN algorithms. After a certain scale of learning, the network structure parameters of DQN algorithm are obtained and saved as a model. When the model is directly applied in this scenario, the aerial-BSs will stay in the optimal position of system spectrum efficiency.

What are practical use cases for aerial base stations?

Practical use cases for aerial base stations UAVs are highly desirable in today's communication systems due to their agility and mobility, low-cost of implementation and ability to move to higher altitudes to provide LoS communications, .

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We propose a three-dimensional channel model for base-station-to-unmanned-ground-vehicle communication, where a linear fluid antenna system is equipped on the ...

We have studied Chan-Taylor two-dimensional positioning algorithm and propose an innovative Chan-Taylor three-dimensional positioning algorithm. And we apply it to the indoor ...

Abstract: Aiming at the problem that the indoor three-dimensional positioning algorithm is complex and the accuracy is not high, this paper proposes a three-dimensional ...

Unmanned aerial vehicles (UAVs), also named as drones, have become a modern model to provide a quick wireless communication ...

The embodiment of the invention discloses a method, a device and a base station which use three-dimensional beam codebooks to perform communication in a wireless communication ...

This paper proposes an efficient three-dimension (3D) placement of a single UAV-assisted wireless network in such cases. Our proposed model ...

A space three-dimensional, base station antenna technology, applied to antennas, antenna parts, antenna supports/installation devices, etc., can solve problems such as increasing production ...

A three-dimensional (3D) geometry-based RIS-assisted channel model is proposed for stochastic multiple-input multiple-output (MIMO) unmanned aerial vehicle (UAV)-to-ground ...

Theoretical modeling and analysis of Uplink performance for Three-dimension spatial RISs-aided Wireless communication systems

PDF | A literature review is presented on energy consumption and heat transfer in recent fifth-generation (5G) antennas in network base stations.

Base stations and users tend to move in three dimensional (3D) continuous spaces, while antennas and propagation environments can be tightly coupled. The underlying ...

The three-dimensional integrated benchmarking calculation is mainly divided into three steps: the first step is to traverse the stations in three dimensions near each sites as ...

Disclosed in an embodiment of the present invention are a method, device and base station for communication in a wireless communication system by utilizing a three-dimensional beam ...

In this paper, we investigate a promising base station (BS) architecture that integrates a beyond diagonal RIS (BD-RIS) within the BS to enable passive beamforming. By ...

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