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Disseminated gold - copper mineralization at Wayin, Burkina Faso

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The site Wayin is located ∼ 60 km ESE of Ouagadougou, Burkina Faso. The topography is flat with hardly any outcrop. The area is covered by laterites and deeply weathered metavolcanics. The mineralization was discovered by regional geochemistry, which was followed by drilling. Recent airborne and ground geophysical survey show very good correlation between conductivity and mineralization trends.
The region is part of a long NE trended greenstone belt, which has been locally distorted by a NW – SE kink. This distortion could have been caused by lithosphere thickening, e.g. a small continent, which blocked the folding of the greenstone arc formation. This deformation could have been instrumental for the formation of several zones with gold- copper mineralization.
This mineralization is associated with magmatic activity, mainly grano-diorite and gabbro intrusions at the intercontinental basin margin. Felsic intrusions with some chalcopyrite stockwerk are observed too. The host rock was strongly deformed during amphibolite grade metamorphism, which took place between 2120 and 2100 Ma. The deformation led to the formation of isoclinal structures followed by shearing and foliation.
Macroscopically visible there are virtually only pyrite and chalcopyrite, amounting frequently to more than 5 % of the rock. Pyrite appears as irregularly formed specks between amphibole and plagioclase grains. Millimeter size poorly developed pyrite crystals frequently are forming stringers in accordance with the metamorphic metavolcanic texture. Other sulphides, like chalcopyrite and arsenopyrite also free gold cannot be seen with the naked eye. Occasionally molybdenite can be seen on fracture surfaces. Among the gangue minerals quartz and minor anhydrite are observed.
The content of gold varies significantly from one drill hole to another, ranging up to 3 ppm Au. Copper – values can reach 10.000 ppm Cu. According to drilling results the vertical mineralization thickness reaches > 100 meters.
The investigation of ore structural peculiarities, of ore mineral composition, and their associations, the mineral distribution along the mineralization zone was carried out using optical microscopy and scanning electron microscopy with energy dispersive analysis, EDA. Studies on the genesis of the deposit are under way.