

Normal coloring — an equivalent version of Petersen coloring — is a special proper 5-edge-coloring of cubic graphs. Every edge in a normally colored graph is normal, i.e. it uses together with its four neighbours either only three colors or all five colors. Jaeger conjectured that every bridgeless cubic graph has a normal coloring. This conjecture, if true, imply for example Cycle double cover conjecture. Here we solve a weakened version of Jaeger’s problem. We are looking for a proper 5-edge-coloring such that at least a part of the edges is normal. We show a coloring of generalized prisms with two thirds of the edges normal and a coloring of graphs without short cycles with almost half of the edges normal. Then we propose a new approach to normal coloring — chains. We use chains to prove that there cannot be only one single mistake in an almost normally colored graph. We also prove some statements about cuts in a normally colored graph which also follow from nowhere-zero Petersen flow. Finally, we examine a four-cycle in a normally colored graph.