In recent measurements of infrared transitions in solid parahydrogen with low ortho impurities, using an internal multireflection system for a sample path length of 14 cm, we have detected new weak features in the spectral region 10 000–13 000 cm\(^{-1}\). Of particular interest here is the second overtone band of solid hydrogen and double transitions of the type \(Q_2(J') + Q_1(J)\) \((J, J' = 0, 1)\) which will be presented. At 10 241.07 cm\(^{-1}\) the new single transition \(W_2(0)\) could be observed.

We will also present further results of the analysis of our measurements in the first overtone region, especially a theoretical explanation of the intensities in the fine structure of the \(Q_2(1) + Q_1(1)\) double transition.

The absorption spectrum in the mid-infrared region (700–2 000 cm\(^{-1}\)) is currently under investigation, and new information in this region will also be presented.