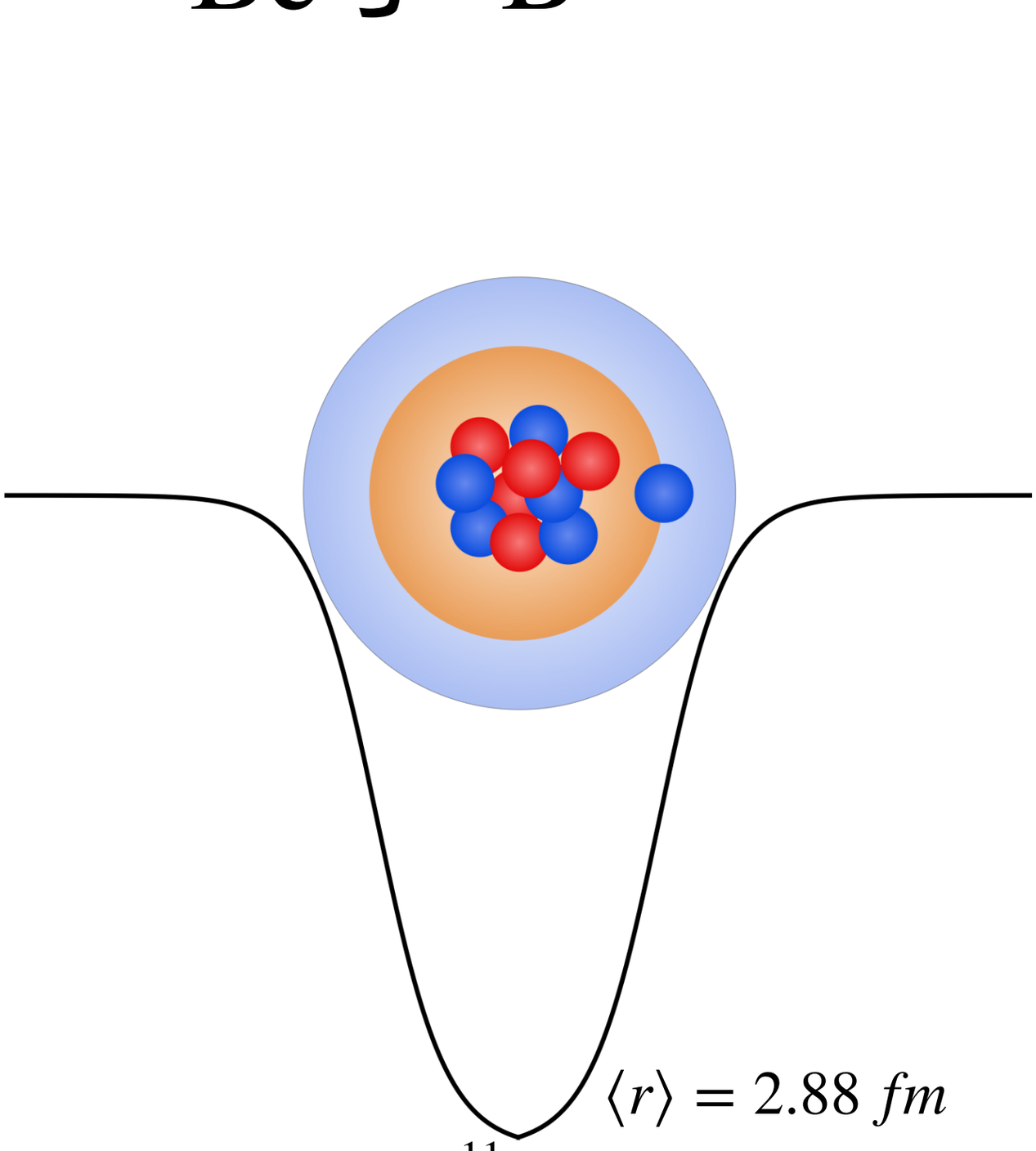
组会 2023/04/18

弱束缚核

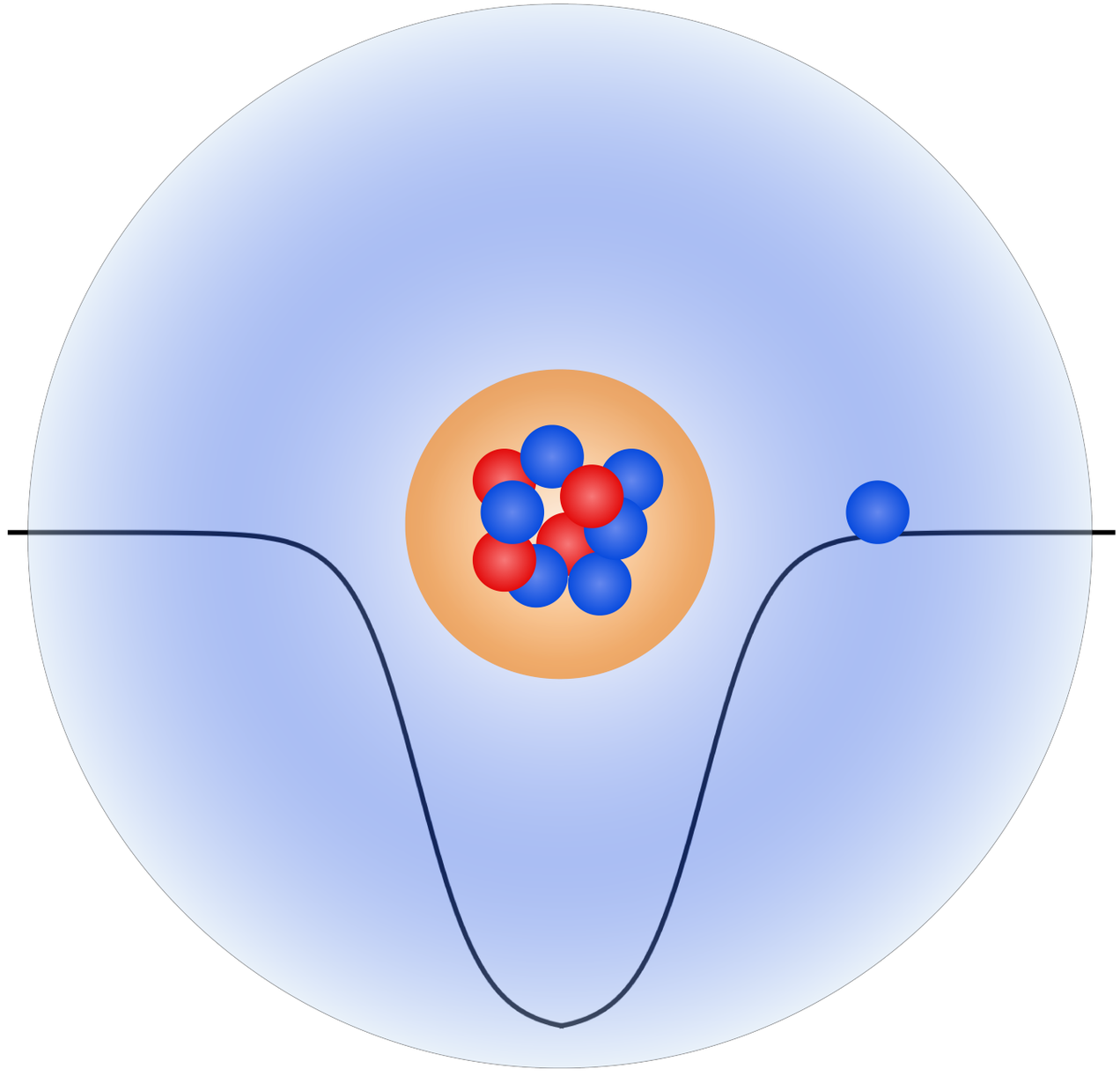
刘昊

^{11}Be与^{11}B



^{11}B $\quad \langle r \rangle = 2.88\ fm$, $\sigma_r = 1.36\ fm$

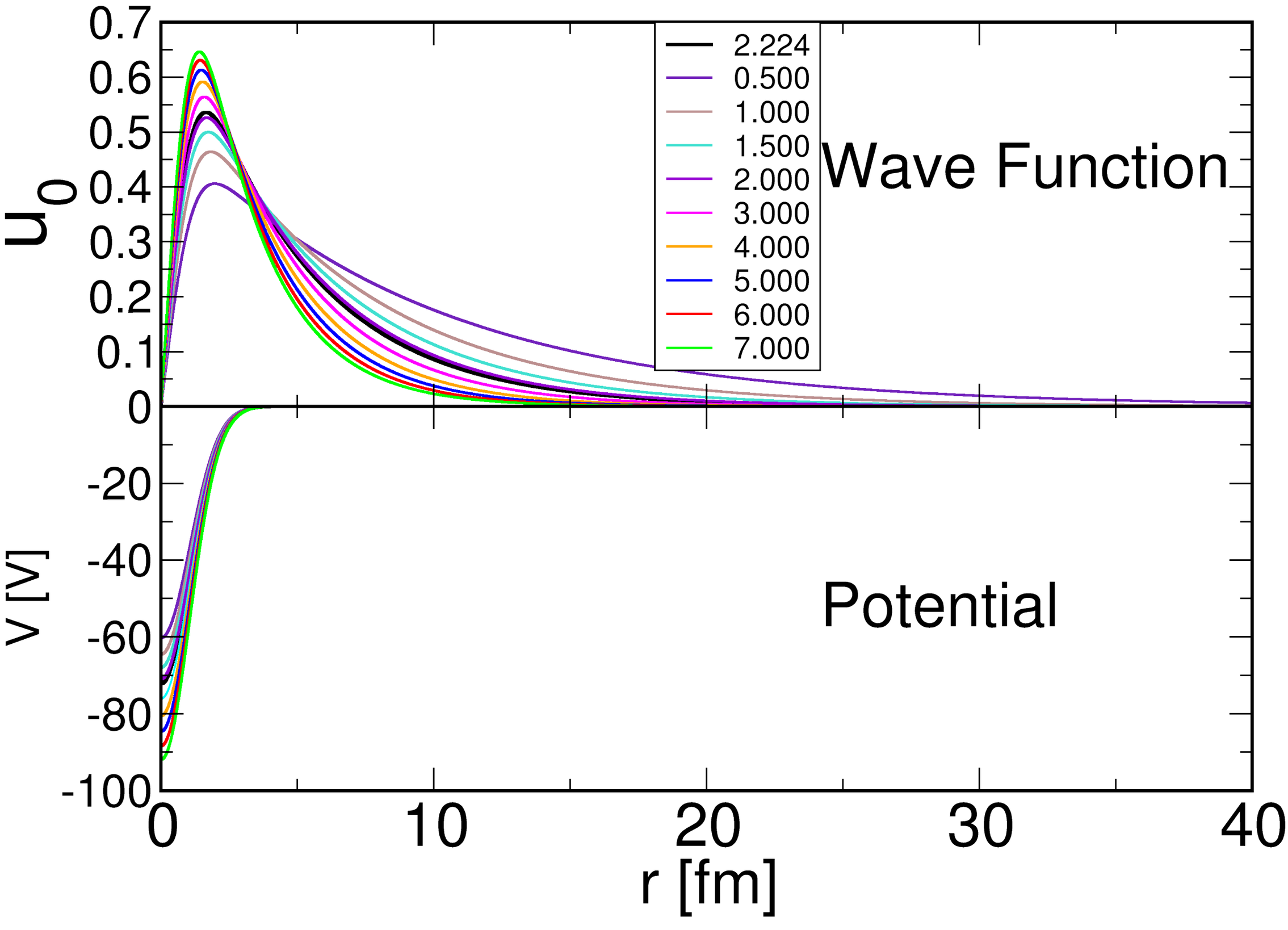
束缚能为11.454 MeV



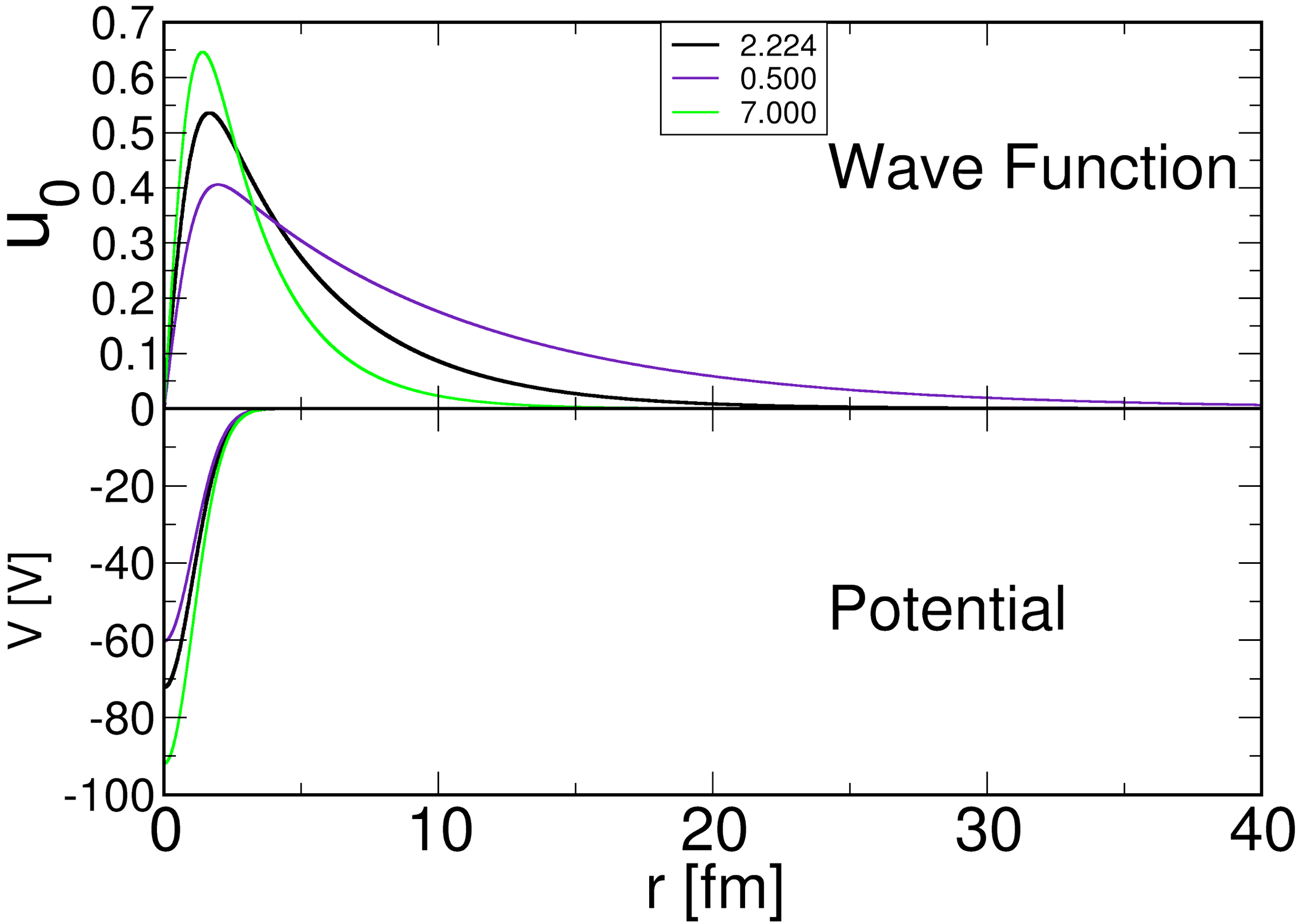
^{11}Be $\quad \langle r \rangle = 5.98\ fm$, $\sigma_r = 3.62\ fm$

束缚能为0.504 MeV

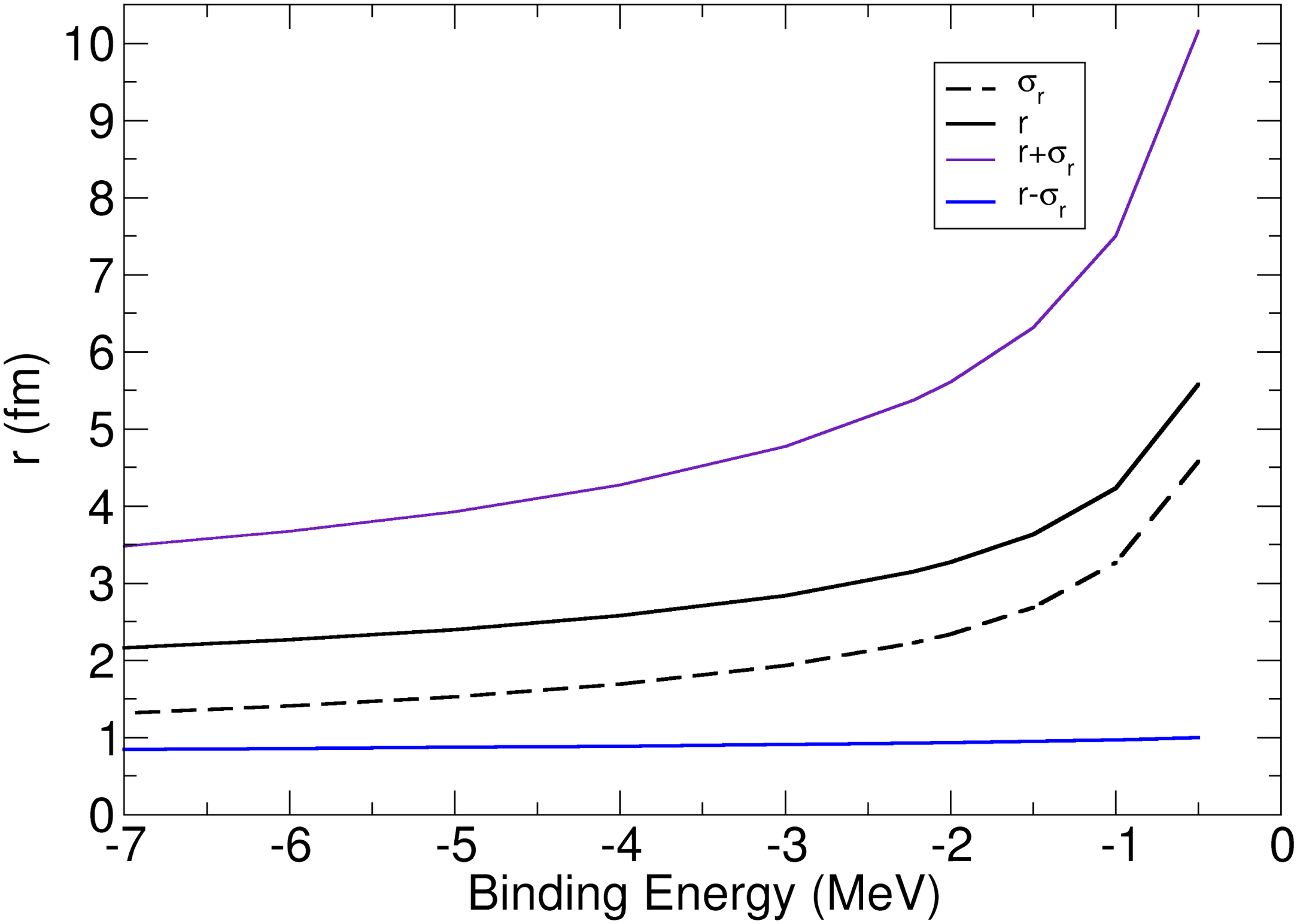
不同束缚能下的np束缚态的波函数



不同束缚能下的np束缚态的波函数

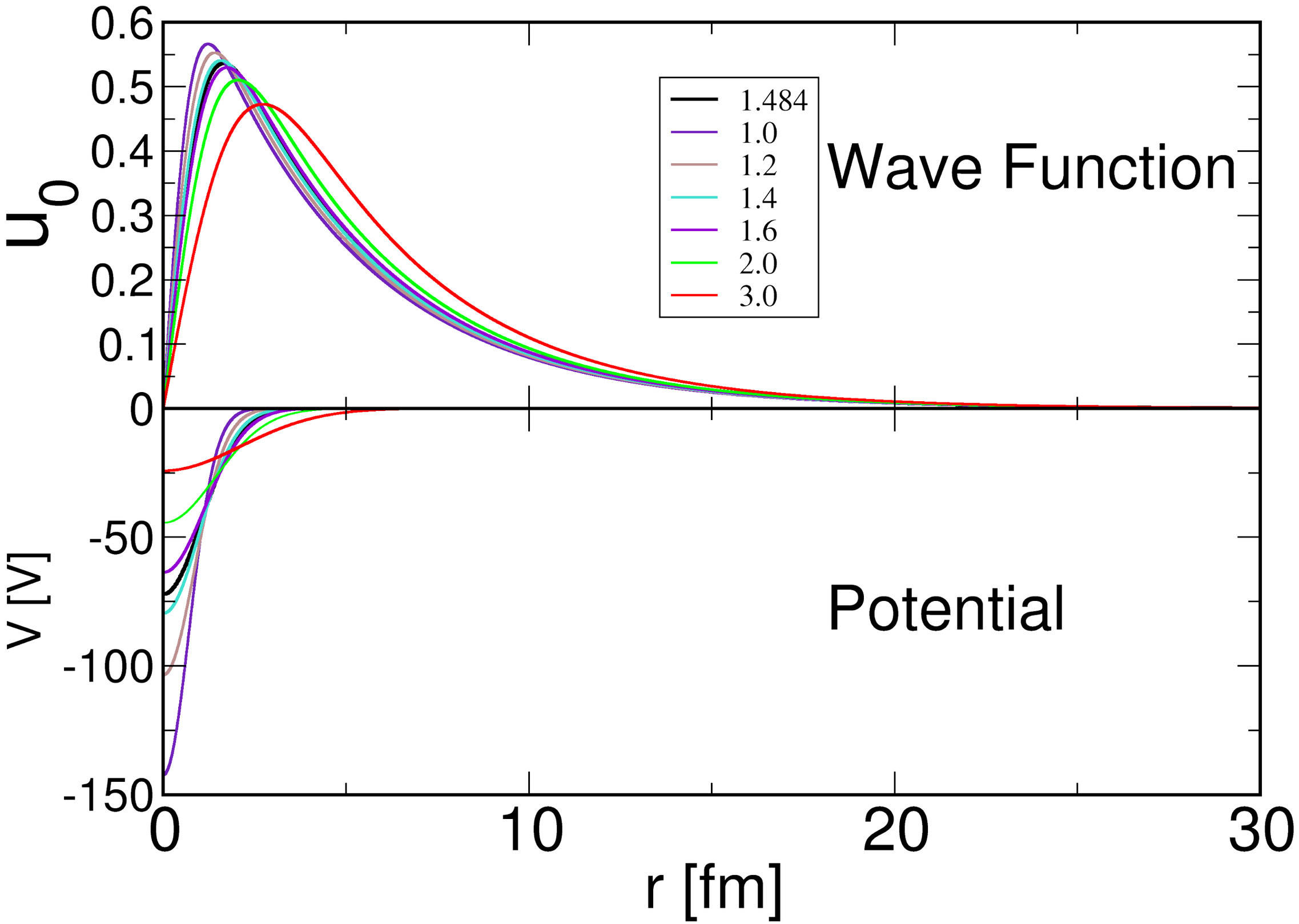


不同束缚能下的np束缚态

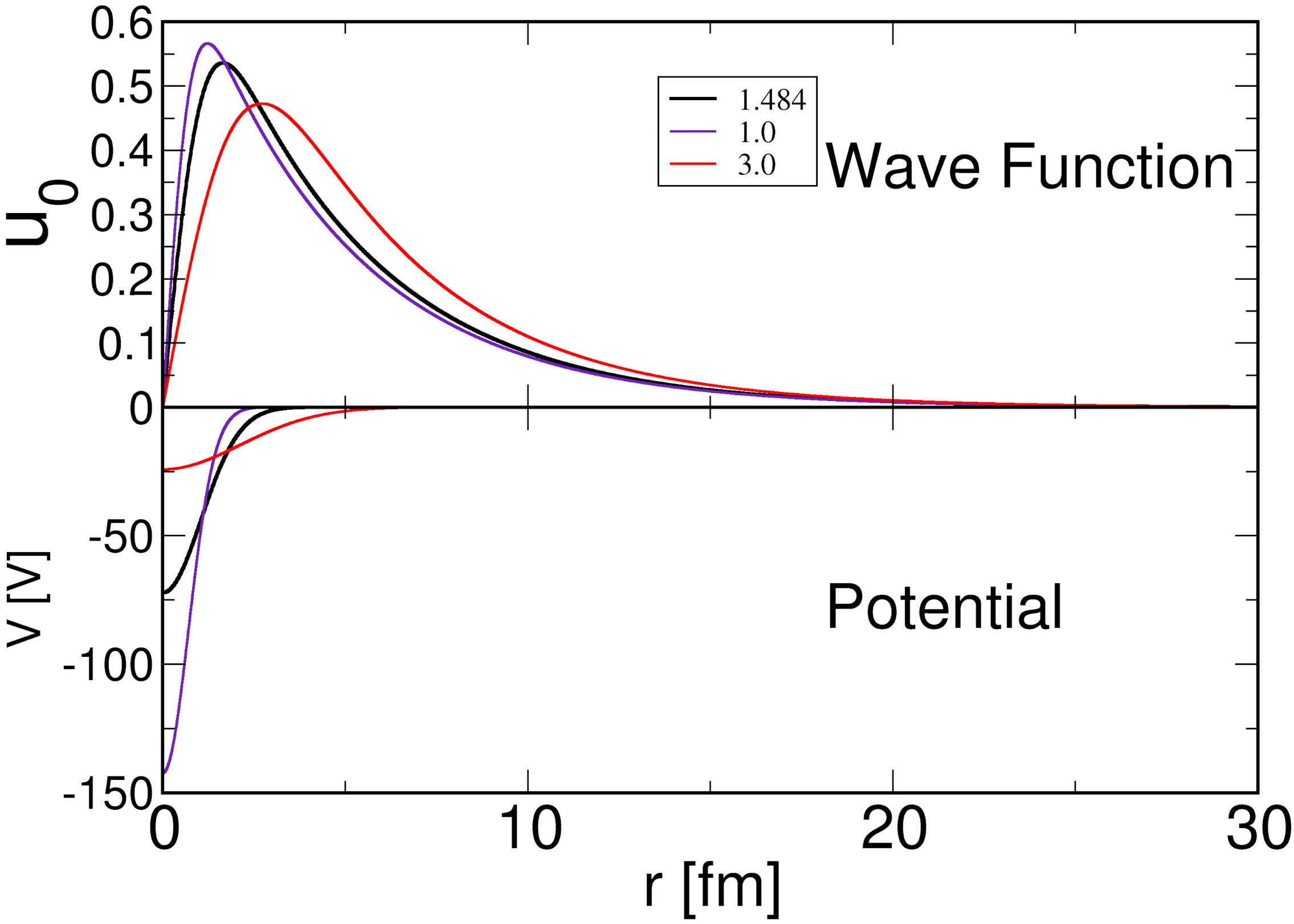


不同a下的np束缚态

$$V(r) = V_0 \exp(-r^2/a^2)$$



不同束缚能下的np束缚态



Bash脚本更改input

```
# 设置要处理的值
values=(-0.50 -1.0 -1.50 -2.0 -3.0 -4.0 -5.0 -6.0 -7.0)

# 循环处理每个值
for be in "${values[@]}"
do
  # 创建一个新的目录以存储结果文件
  if [ ! -d "result_$be" ]
  then
  # create a new directory to store the result files
  mkdir -p "result_$be"

  # replace the value of be in put.in with the current value in the loop
 #sed -i "s/be=-[0-9.]*\+/be=$be/" put.in
awk -v be="$be" '{sub(/be=[^ ]*/, "be="be)}1' put.in > put.in.tmp && mv put.in.tmp put.in



  # run the program and redirect the output to the out file
  ./test < put.in > out

  # copy the files with fort prefix and out file to the result directory
  cp fort.* out "result_$be/"
  else
    echo "result_$be already exists, skipping..."
awk -v be="$be" '{sub(/be=[^ ]*/, "be="be)}1' put.in > put.in.tmp && mv put.in.tmp put.in



    #sed -i  '' 's/be.*$/be:=$be/g' put.in
  # run the program and redirect the output to the out file
  ./test < put.in > out

  # copy the files with fort prefix and out file to the result directory
  cp fort.* out "result_$be/"
  fi

done
```